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Directory of Package-Testing and Advisory Institutions

By WALDON FAWCETT

THIS MUSTER represents an assembly for reference purposes of the agencies—public, semi-public, and private—that are in position to contribute, directly or indirectly, to a knowledge of packages and packaging. In part, the inspiration for this roll call has been found in the disappointment expressed, now and again, by packages over the comparatively small number of package-proving establishments equipped for miscellaneous investigation and experiment. From the implied reproach has sprung the desire to demonstrate that packagedom has unsuspected storehouses of technical data and expert opinion in the institutions which, if not devoted to appraisal of packages in their entirety, render no less valuable "intelligence service" on package materials, package designs, etc.

American Bottlers of Carbonated Beverages, 726 Bond Bldg., Washington, D. C.: Maintains, incident to its service activities, a trade mark bureau which comes within hail of packaging through efforts to stabilize notations on lithographed crowns, etc.

American Management Association, 20 Vesey St., New York: Research on packaging carried on incident to the planning for the annual Packaging Expositions.

American Society for Testing Materials, 1315 *Spruce St., Philadelphia, Pa.:* Limited in its service to the packaging industries but makes some contact via its work on the standardization of specifications and methods of tests for miscellaneous materials such as papers, etc.

American Spice Trade Association, 82 Wall St., New York City: Has assembled considerable data on packaging in the spice field incident to simplification or standardization of spice containers.

American Veneer Package Association, Washington Loan & Trust Bldg., Washington, D. C.: Scope of research indicated by title.

American Warehousemen's Association, 222 West Adams St., Chicago, Ill.: A resource for the answering of technical questions bearing upon package design and package construction as influenced by considerations of storage in, and distribution from, public warehouses. Also for details on the procedure of repacking or repackaging as carried on in local or regional warehouses.

American Waxed Paper Association, 342 Madison Ave., New York City: This organization claims that its standard requirements for packaging have resulted in the elimination of many needless sizes and that the organization has further contributed to the cause of better packaging by establishing standards for quality, weight, etc.

Associated Cooperage Industries of America, 2008 Railway Exchange Bldg., St. Louis, Mo.: Studies of the properties, construction and uses of tight and slack wooden barrels and kegs, with especial reference to specific commodities.

Associated Knit Underwear Manufacturers of America, Mann Builting, Utica, N. Y.: Has on file data accumulated preliminary to the adoption of five standard sizes of boxes for the underwear line.

Bureau of Business Research, School of Business Administration, University of Pittsburgh, Pittsburgh, Pa.: Has conducted packaging studies, notably "The Investigation of Consumer Attitude Toward Meat Packages" carried out several years since with the cooperation of the *National Provisioner.*

Bureau of Fisheries, Department of Commerce, Washington, D. C.: A national bureau concerned with the maintenance and extension of the commercial fisheries of the United States and Alaska. Some years ago the bureau gathered, at first hand, valuable information on the containers and packages used in shipping shucked oysters. During the past year the bureau has established a refrigeration laboratory to facilitate study of the improvements in the methods of handling fresh fish. Technologists of the Division of Fishery Industries are devoting much attention to the packaging of fresh, frozen and smoked products and will be in a position to give authoritative advice to packagers.

Census of Manufactures, and Census of Distribution, The Bureau of the Census, Department of Commerce, Washington, D. C.: Outstanding sources for authoritative statistical information covering the production and distribution of all classes of packages and packaging materials.

Container Testing Laboratories, Inc., 300 *Fourth Ave., New York City:* An organization of consulting engineers specializing in the design, construction, packing, testing and transportation problems of containers for all commodities.

The Cotton-Textile Institute, Inc., 320 *Broadway, New York City:* With the object of extending the uses of cotton, has carried on extensive experiments and tests on new uses for cotton bags and other cotton containers.

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W. V. Cruess, associate professor of fruit products, 336 Hilgard Hall, College of Agriculture, University of California, Berkeley, Cal., has gathered first-hand valuable information on the packaging of fruit products, etc.

H. C. Diehl, U. S. Agricultural Experiment Station, Wenatchee, Wash.: Specialist in charge of federal investigations of the packaging of "frozen pack" of berries and other fruits, vegetables, etc.

Federal Trade Commission, Washington, D. C.: Creator of the institution known as the Trade Practice Conference which is employed, on occasion, to bring about concert of action in an industry covering packaging practices. Data available on specific projects, for example, the recommendation to the spice trade of standard containers for retail units.

Forest Products Laboratory, Madison, Wis.: Operated by the Forest Service, U. S. Department of Agriculture, in cooperation with the University of Wisconsin. It has a division devoted to containers and has carried on, over a period of years, much valuable research on containers. The information obtainable at this source is not confined, as many business men have assumed, to wooden packages.

Freight Container Bureau, American Railway Association, 30 Vesey St., New York City: Has outlined, in a large number of publications, efficient and economical methods of packing and shipping various commodities. Concerns itself with crates and crating rather than with internal packing and packages but has also carried on some research work on inside containers, as, for instance, the study of cans for liquids, semi-liquids and pastes.

Glass Container Association of America, 19 West 44th St., New York City: Carries on a continuing program of research on the various classes of glass packages such as preserve glasses, drug and pharmaceutical bottles, cheese jars, etc.

Institute of American Meat Packers, 506 South Wabash Ave., Chicago, Ill.: Incident to the work of standardizing packs, the Institute has carried on a considerable amount of research on packages as, for example, lard cans, sausage and sliced bacon cartons, wrappers for smoked meats, and glass jars for vinegar-pickled products. Merchandising investigations conducted to ascertain necessity for changes in the size and weight of packs.

League for the Suppression of Design Piracy, Graybar Building, New York City: Includes among its objectives protection of package designs and has in hand evidence of evils of design invasion.

Library of Congress, Washington, D. C.: Has a fairly complete collection of books in English and foreign languages on packaging in all its branches, and bound volumes of periodicals devoted to the subject. The one best source of out-of-print publications. Volumes may not be withdrawn from the Library but may be consulted in the reading rooms and photostat copies obtained when circumstances warrant. U. S. Copyright Office, a branch of the Library, registers art subjects such as are employed in gift packaging.

Merchandising Research Division, Bureau of Foreign and Domestic Commerce, Washington, D. C.: The Costs and Operations Analysis Section has inaugurated, incident to general surveys of wholesale and retail distribution, a series of studies of packages and packaging practice. The current example is the study of proprietary packages, incident to the National Drug Store Survey.

Metropolitan Life Insurance Co., Policyholders' Service Bureau, 1 Madison Ave., New York: "The Use of Style and Design In Industry," and other reports touching packaging practices are published by the Division of Marketing and Distribution.

Modern Packaging, 425 Fourth Ave., New York City: Maintains a permanent exhibit of packages and packaging materials, together with photographs and catalogs of packing equipment, general and specific packaging information, etc.

National Alliance of Art and Industry, Inc., 65 East 56th St., New York City: Maintains a library of design information and a laboratory for design experimentation and conducts a vocational guidance and placement service (maintained by the Art Alliance of America) for artists and designers.

National Association of Waste Material Dealers, Inc., Times Bldg., New York City: The salvage and reclamation division of this organization is a listening post for information on the salvage and reclamation of containers.

National Bureau of Standards, Washington, D. C.: The principal Federal scientific laboratory, which serves the cause of progress in industry. Has the dual function of a research agency and official testing station for all branches of the national Government in examination of samples and verification of Departmental purchases. Scrutiny of packages, as such, is confined principally to the package standardization projects of the Division of Simplified Practice. Practical aid for packagers is contributed by numerous specialized studies of packaging materials, notably papers, inks, adhesives, etc.

National Canners Association, 1739 H St., N. W., Washington, D. C.: Packaging is a major subject in the permanent program of this organization. Following the adoption of 27 standard sizes of cans, merchandising studies are in progress to ascertain the need of modifications or revisions of the package schedule.

National Cigar Box Manufacturers Association, 236 Chestnut St., Philadelphia, Pa.: Channel for informative contact with a highly specialized section of the container industries. Also sponsors the Wooden Cigar Box Boosters Club.

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National Committee on Wood Utilization, Washington, D. C.: Has assembled and published data and suggestions on the reuse of wooden packages and the use of short-length lumber for package construction.

National Confectioners' Association, 111 W. Washington Street, Chicago, Ill.: Maintains a trade mark "search" service and has carried on research work on special aspects of packaging.

National Paint, Oil and Varnish Association, 2201 New York Ave., N. W. Washington, D. C.: Maintains a trade mark bureau and committee on trade marks which make indirect contact with packaging activities in the effort to prevent duplication of dress of goods within the industry.

National Paper Box Manufacturers Association, 802 Liberty Trust Building, Philadelphia, Pa.: Clearing house for information on set-up paper boxes.

National Paper Trade Association of the United States, 420 Lexington Ave., New York City: Contacts the packaging field via its research work on gummed tape, tissue papers, paper bags, etc.

New England Council, Statler Bldg., Boston, Mass.: Carries on a consistent campaign to encourage the packaging of farm products under the "New England Quality Label."

New York University, Washington Sq., New York City: Has conducted, in its Department of Marketing, comparative tests to ascertain consumer preferences for package design and package color. A typical test was that to measure the reaction of a representative cross-section of the public to several tentative designs for a new package for Wheatsworth Whole Wheat Crackers.

Package Manufacturers: All the leading manufacturers of packages are ready to place their facilities at the disposal of customers or prospective customers and to give the benefit of their experience in advice on package selection. A number of the package producers have service arrangements whereby their engineers, when made acquainted with the special requirements of a particular packer, will submit without obligation explicit suggestions for suitable packages or full-scale models of original package units.

Package Standardization Specialists: The U. S. Department of Agriculture has, in its Bureau of Agricultural Economics, specialists who are the best sources of information on all the phases of package standardization which embrace baskets, crates, boxes, barrels, sacks and other packages for fruits and vegetables.

Packaging Machinery Manufacturers: All the leading manufacturers of packaging and wrapping machinery, mechanical labelers, etc., are prepared and willing to give expert advice on questions of package policy which are dictated or influenced by considerations of weighing, sealing, handling, etc. Naturally, each individual machinery builder is best qualified to give advice on package designs and package construction that has in contemplation the employment of his particular machinery.

Packaging Section, Transportation and Communication Division of the Bureau of Foreign and Domestic Commerce, Washington, D. C.: The Commerce Department's agency for packing research and dissemination of information. Supposedly concerned primarily with packing (especially for overseas shipment) as distinguished from packaging, but nevertheless a valuable source of data for packagers. Most important contribution to date is a series (as yet uncompleted) of bulletins on the various types of packages entering domestic commerce. Bulletins are available on fibre containers, wooden boxes, wooden crates, plywood boxes, wire-bound boxes, nailed wooden crates, parcel post packages, etc.

Paper Bag Manufacturers Institute, 11 West 42nd St., New York City: Information bureau on the paper bag medium in general and particularly its later modifications such as the "window" bag, etc.

Paperboard Industries Association, 608 South Dearborn St., Chicago, Ill.: Program of work includes research and market studies in the field of packaging and container manufacture.

Plywood Box Manufacturers Association of America, 260 Tremont St., Boston, Mass.: Directory service to a section of the industry.

Railway Express Agency, Inc., New York City: Gives counsel to shippers or other interested parties on "good packing," "good wrapping" and "good marking." Specific rules or recommendations for eleven different classes of commodities.

Standard Container Manufacturers, Realty Bldg., Jacksonville, Fla.: Seeks to promote uniform customs, usages, and standards for all fruit and vegetable packages, and carries on research in economies in manufacture.

Steel Barrel Manufacturers Institute, Keith Bldg., Cleveland, Ohio: Research and tests necessary for recommendations for steel barrel drums, etc.

Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.: "Uncle Sam's mail order book store." Has for sale, at prices approximating cost of production, the various Government publications on packages and packaging, including the complete records of Congressional hearings on proposed packaging legislation.

Traffic, Receiving and Marking Group of the National Retail Dry Goods Association, 225 West 34th Street, New York City: Has assembled data on store packaging, etc. Has published reports on unit packing, shipping containers and store packing.

Wirebound Box Manufacturers Association, 111

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West Washington St., Chicago, Ill.: Tests wirebound boxes and designs new packages. Prepares specifications for all styles of wooden wirewound boxes.

United Typothetae of America, 1200 *Tower Bldg., Washington, D. C.:* Deals with packages, incident to its research in the field of merchandise distribution and market analysis. Concerned especially with the various aspects of package printing.

U. S. Food and Drug Administration, Department of Agriculture, Washington, D. C.: The official agency for the enforcement of the Federal Food and Drug Act. Stands ready, in the position of counsellor, to advise packagers of food products on what constitutes "misbranding" and to indicate what policies in package design will absolve packagers from any suspicion of "slack" packaging or "short" packaging. Illustrative of the practical research work of this regulatory institution is the comparative study of tea packages, undertaken to ascertain the comparative advantages and disadvantges of the different species of household packages for tea. This administration has, in its food control laboratory, a mineral water and beverage unit that is a source of information on the subject indicated.

United States Patent Office, Washington, D. C.: Supplies, on order by number, at a nominal price, printed copies of designated design patents covering packages, also mechanical patents covering package features with working arts, such as closures, etc. Accepts subscriptions for the delivery by mail of the weekly issues of the *Patent Office Gazette,* the official publication, which lists, illustrates and indexes the patents issued and trade marks registered, with the names of applicants. The *Gazette* likewise enumerates by title the package labels on which copyrights have been obtained at the U. S. Patent Office.

The United States Printing & Lithograph Co., Cincinnati, Ohio: This house has a trade mark bureau which affords information and suggestion on the subject of packaging. In 1931, the company did important research work on private brand packaging.

Wolf & Company, Department of Business Analysis, 1616 *Walnut St., Philadelphia, Pa.:* Has, of date of the past few years, a number of surveys and studies of packaging and kindred subjects, such as the "Analysis of the Set-Up Paper Box Manufacturing Industry," conducted for the National Paper Box Manufacturers Association.

Wooden Box Bureau of the National Association of Wooden Box Manufacturers and National Lumber Manufacturers Association, Conway Building, Chicago, Ill.: Promotional work has included research on the development of small nailed wooden boxes for unit packages.

Factors Governing Package Design

By EDWIN H. SCHEELE

Package Design Corporation

CONSTANT IMPROVEMENT of public taste in design has resulted in a discrimination which has rapidly spread to all classes of merchandise and has gained sufficient momentum to cause manufacturers as well as retailers to feel this influence. This effect is evidenced by the present wave of "package consciousness." While no phase of production or merchandising entails more anxiety than the birth of a new package, it is astounding to learn how many manufacturers know little or nothing about the foundation to be laid before bringing a new package to the buying public. This is the reason why many new packages have not met with the manufacturer's expected degree of acceptance by the consumer.

Although cognizant of the major importance of the package as a sales factor, the manufacturer must be warned of the dangers that exist in the wrong approach to the design of a new package or the redesign of an old one. Regardless of the personal opinions of those to whom this subject is fairly new, the artistic appearance alone should not be the standard of judging the new package. To proceed without some knowledge of the factors governing package design is to invite trouble.

Any attempt to outline a concrete plan for every manufacturer to follow when bringing out a new package would only cause more trouble because each problem is sufficiently different to warrant individual study and recommendation. However, there are certain factors which should be considered before proceeding with the actual work of executing the package design which must commence with the actual product, its manufacture and its use until the package is empty. The package should be planned with regard to its specific duty as well as the use of material, shape, size, color and design to express the product in terms that will be understood by the consumer. Thus, the appropriate package is the natural sequence of the research and creative efforts preceding and determining its design. It is the purpose of this article to present a brief outline of

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package design factors which may serve merely as a basis for approaching a package design problem, establishing the objective and developing the vehicle for its desired accomplishment.

Consumer Preferences, Marketing Methods and Merchandising Ideas

1. If the package is not for a new product but is a redesign of an old package, read the following twice: "Change should never be considered an end in itself." The value of a change in package design as a sales stimulant does not exist in the element of change as such, except in certain seasonal specialty or novelty merchandise fields. Unless one has a definite reason for changing a package design, leave it alone.

(A) Careful planning and tests to discover consumer preferences will often aid in determining whether to change the package or not.

(B) For the new product, plan the package carefully to insure it against all possible mistakes in design, utility and competition in display. It is the products' personality, a message to the consumer and therefore must be in harmony with the product in the consumer's language.

(C) Among some of the major reasons for a change in package design are:

To establish family resemblance to encourage group purchases, or to create harmony in a line through the borrowing of good-will from certain leaders for newer additions.

Improvements in construction to facilitate ease of use by consumers.

To conform with new or changed buying habits such as new units of sale.

To widen the market to include new classes of retail outlets.

New uses for the product conforming with modern modes of living or marketing a staple as a gift item.

A radical improvement in the manufacture and refinement of the product to stop or beat competition.

To use the package as the keynote for a new intense and dominating advertising campaign especially where a product has not been advertised extensively for a period of years.

To intensify present package personality by a process of simplification and improvement of design balance and color harmony.

To conform with a change in merchandising such as the enlargement of a line or the increase of retail sales prices, new outlets, etc.

2. *Potential Market.* Will the product be distributed to the masses? Is it for foreign and domestic use or national distribution or local within a certain radius? A specialized market will require a different type package. The market one intends to reach is of real importance in designing the package. Good taste in design or style of a package is a matter of knowledge and not opinion. Study the market. Get the facts, principally the major sales points—those things that appeal to the consumer when redesigning a package. Improvement does not necessarily mean raising the level or refinement of appeal or trading up. One should be careful that the package speaks to the contemplated market.

3. *Class of Outlets.* Consider mechandising practices and conditions existing in the class of retail outlets that will affect the design of the package. Will it sell in specialty shops, drug stores, hardware stores, grocery stores, or must the package fit into all types of stores? Do these merchants use open display methods; are self-service sales methods used; will the package be displayed from the shelves; do they place packages on their counters or are glass display cases used? The class of retail outlet and the method of distribution will also affect determination of the amount of protection required in the package construction.

Consult buyers, keen retailers and wholesale distributors for suggestions as to what questions customers are asking—what are their preferences or things they like about similar products, if any? Is there a trend to new price levels or is any other buying habit changing? What member of the family does the actual puchasing? These men should know public taste and often their comments will have an important bearing on package design. But do not ask them how your package should be designed or you will be surprised at the various "opinions" offered. Rather ask what is the leading brand in sales, the second best and what consumers say about these brands. In redesigning a package you will learn some pertinent facts about the value of your own brand name and trade mark.

4. *Competition.* Study the packages of competitors. Have they been making any changes, and how? What were reactions of distributors, retailers, consumers? How did the change affect point of sale cooperation and what percentage increase in sales, if any? Unearth all information that will indicate which are the permanent forward steps in package design as against that which relates to fashion or of the present mode. Be careful not to imitate competition. Your package should be as different as possible without leaving the category of your field.

Establishing the Package Design Objective

5. *Use.* When, where and how will the consumer use the package? Is it seasonal? Can a new use for the product be developed? Does the package remain in use until the contents are consumed or are the contents removed immediately after purchase? Must the package stand repeated use in the

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home, office or factory and will it be resealed after each use? Will the package be used in the boudoir, parlor, kitchen, bathroom, garage, store, travel, etc.? Will the package have a re-use value? These and many other factors regarding the use of the package must be considered from the consumer standpoint to ascertain what their habits are and how it will affect the design of the package. Is it or can it be used for gift purposes? The package may be used in combination with other related products with which it should harmonize. There may be some mechanical feature to incorporate to facilitate its use.

6. *Exploitation.* What kind of advertising will be used—point of sale, or general? How will it be featured? This is especially important in redesign work. If a package will meet the public only from a lower dark shelf in a grocery store, many elements of good package design must be sacrificed to increase display value so that it will gain attention. For the package cannot do the entire job of building sales without some support to bring it to the attention of the consumer. As a rule, the dealer will put new or redesigned packages to the front of his counter, store or whatever is his practice in order to study sales reaction. But this is often a temporary stimulus not to be depended on for consistent sales, and applies almost solely to low cost, low profit, slow moving staples, although to be remembered when designing packages for this class of merchandise.

7. *Primary Appeal.* Each product has at least one primary appeal that should be emphasized in the package design. Depending on the product, it should be determined whether the primary appeal to the consumer shall be one of economy; sanitation; comfort; utility; quality; health; luxury; pleasure; beauty, etc. If the product has two forms of appeal, decide which will be more important to the consumer for the primary appeal and make the other secondary to it.

8. *Style.* The new package should dominate in its field but caution should not be abandoned. Many factors previously determined will strongly influence the style of the package. To these must be added, when redesigning an old package, such design elements as have proven their sales value. These may be in the form of a color combination or a certain layout of detail proportions but more usually they will be a trade mark, title style, a predominant color, etc. Whether or not family resemblance is to be established or retained is another feature controlling to some extent the matter of style. Other considerations such as appropriateness of color to product, industrial tradition or fear of loss of established consumer acceptance for a slightly advertised product will have some bearing. It would be practically impossible to list an adequate number of conditions affecting and guiding the styling of a package in spite of the fact that this is one of the major problems that must be dealt with in package design.

9. *Cost per Package Allowable.* The work that has gone before and that to follow is usually charged to sales promotion. In determining the package cost, figures may have to be changed in the last analysis because often the advantages to be gained by some package idea costing slightly more than the original stipulation will justify the result. But some figure must be tentatively established to facilitate the work of designing the new package and keep these efforts within such limits as will prove economically sound. It will also eliminate much lost motion. There is no rule of percentage to retail sale or manufacturing cost. There are certain trade practices in each industry that will serve as a guide and much will depend on the relative importance of the package in making the retail sale. Quantity, protection, handling, etc., must be considered. One important fact to bear in mind is that not only packaging materials but also a consideration of the various processes of packaging, automatic or hand, will have to be kept in mind when determining package cost. Each manufacturer's facilities or equipment is different and therefore the same package that costs one company six cents may cost another seven or more to duplicate.

10. *Packaging Operations.* Such items as automatic packaging machinery, hand operator's filling machinery, cartoning, bottling, canning, labeling, sealing, packing for shipment, etc., will also influence the design of your new package. Certain packaging details may mean the difference between machine and hand operation. The investment intended or equipment on hand will strongly influence what can and cannot be done in the way of the new package design.

Creative Design

As this part of the package design work is started we commence to appreciate the value of the previous factors considered because function and utility should govern the design.

In package designing the order of importance determined by optical processes of consumer attraction and recognition of packages are: Shape, color, design, title. These are the considerations necessary to develop the package to perform specific duty. Having previously established all restrictions, real freedom of creative efforts follow without fear of making those mistakes often incurred by a hit-or-miss method. By this time many ideas for the new package have suggested themselves. Bear in mind, however, that in addition to the package design quality of execution of the actual package is also necessary to make a successful package.

11. *Shape.* Many factors of construction and plant operation, including the product itself, influ-

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ence the shape of the package. Economy and packaging processes practically predetermine the shape in many industries. But in these cases change in proportion may add distinction, convenience of consumer use, more practical size for better handling, etc. Stacking on counters, store shelves, shipping, etc., are also important factors to be reckoned with.

Selection of packaging material will be influenced by certain physical and chemical characteristics of the product itself and its weight, but does not mean that the display of originality will be hampered. Search the market for new materials or study different materials and subject them to tests. Study these materials for design possibilities, display effects, weight, protection, wear, production, machine handling, etc. Try, if possible, to use a container of different material and physical construction than competing products.

The processes used in the manufacturing of various containers as well as those of factory packaging must be understood. Likewise the possibilities of the material itself to develop a practical, original and unique package construction. By the package is meant all those materials in their combined ensemble that form the presentation of the product to the consumer. Will the construction of the container fit in with present packaging equipment? If glass is the chosen material, can the shape be blown by machinery, can it be handled easily on conveyors, filling machines, capping machines, labelers, cartoners, etc? If paper or board is chosen for material, can the shape be produced with existing cutting, scoring, gluing, forming, wrapping and other machinery? Will seams show on display? If metal is chosen, can the shape be die stamped in one piece, etc.? If any of the newer synthetic resins are chosen, can it be moulded without a split mould; is the draw straight, will the shape slow up the production moulds, etc.? These and many other questions that affect shape must be determined. Be careful that the package is constructed to have a good closure, especially if evaporation, seepage, crystallization, efflorescence or any other reaction is peculiar to the product. Develop patentable features of package construction wherever possible in order to facilitate ease of use by the consumer and at the same time act as an identification of your package. If the package fits the product, its use and its personality, it is good.

12. *Color.* Many packages are recognized immediately by their color or combination of colors. Color is a strong factor in creating package style, legibility, appeal, consumer interest, apparent size, attention value, family resemblance, etc. The selected color should, of course, be appropriate for the product and if possible suggest the product or some quality of the product. Color will also be influenced by the use of the product in consumption, to harmonize with surroundings, by trade traditions, container materials and many things discovered in previous research. Such conditions as scratching, smearing or marking in machine handling, moisture influence in tight wrapping, material surface protection, are as important economically as the factors of consumer preference. Never use conflicting colors to attract attention. Color harmony whether dominant or complementary will bring more satisfactory results. It is not necessary to use ten colors to produce a good package. A well-designed package should be easily described as having a certain color note which is produced by one predominating color or the correct blend of several to give the same effect.

13. *Design.* Market trends, consumer acceptance and association of ideas, the nature of the product, the message to be conveyed, etc., will materially affect the decorative design of the package. The design should be easily associated with the product or its use and much will depend on the job the package is expected to do and the market to be reached. If a package is being redesigned, too great a change is not always advisable. Previous research will indicate whether this is so or not. The general forward movement on all package designing is toward simplicity but not at the expense of utility. This is not a fashion or temporary mode, but a result of better merchandising, quicker sales, chain store handling, changing markets, etc. It has its origin in practical psychology. The more direct and simple the message, the quicker and more positive the mental reaction. Competition in display, featuring the package in advertisements and its use in the home have also caused this change to outmode many packages. There should be nothing about the design of the package to associate it with the element of time, except in those cases where the secondary appeal is one of long standing reputation such as might apply to familiar medicinal remedies. This may apply to certain other merchandise as well, but with the entrance of keener competition, new buying habits and new markets, the use of the container in the home, it is generally becoming necessary for even the largest and best known manufacturers to change their packages to meet these new conditions.

The perfect package would always remain new and attractive regardless of mode, but the perfect package has not yet been designed and probably never will be. A good package design should, however, last for many years in most industries. Where it is a trade custom to change the package every year or season, this custom must be followed because of novelty or the romantic appeal to that particular market. The primary appeal must be featured in the package design in the language of the consumer.

14. *Title.* Title, typography, illustration where necessary, trade mark and other elements of design are all to be considered in conjunction with the ap-

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pearance of the package design as a complete unit. In fact, no part of the process of package designing should be considered by itself without relation to all the other contributing factors. Package designing is not a matter of sticking on a label or changing a few lines of type or any other external application of something that some one likes. The lettering should be legible at a reasonable distance, simple in style, distinctive but never extreme to the extent of being a "freak style." It should harmonize with the package design and, of course, describe the contents of the package.

Successful package designs seldom just happen. Barring luck, the successful sales builders are the result of careful planning such as outlined here. Order of importance to the consumer is the controlling factor. Much depends on the correct interpretation of all these facts by the designer and the distinction between what is modern and what is modernistic. Where any considerable investment is to be risked in the marketing of merchandise, the safe course is to obtain the services of talented and experienced designers to create the required packages. The expense of the very best designs will yield their cost many times over. Consider the new package as a complete ensemble and the impression it creates. Check through your factory to discover production faults in design. Check in key store outlets for consumer reactions, and then get behind your new package and push with publicity. Cooperation at the point of sale will be a major problem this year but will be greatly simplified for the manufacturer whose package sells, because this is the kind of merchandise which receives encouragement from dealers and obtains preferred consideration.

The Size and Shape of a Package

STAFF COMPILATION

THE CORRECT SIZE AND SHAPE of a package for any given commodity depends primarily on the character of the product and the conditions under which it is sold. Generally speaking, however, the rules governing the selection of the proper form for packaging any product may be grouped as follows:

A. Appearance.
B. Protection of contents.
   a. During shipping.
   b. While on display.
   c. While in use.
C. Advertising value.
   a. Suggesting character of the product.
   b. Carrying the trade name, message and name of manufacturer.
   c. Suitability for use in advertising.
D. Economy.
   a. In materials used.
   b. Time element of production.
   c. Adaptability to packaging machinery.
   d. Shipping and selling costs.

Appearance

Considering attractive appearance it must be understood that all package values depend upon the physiological laws governing sight. As the appeal of the package itself must be directed primarily to the eye, a working knowledge of these laws is essential to the creator of packages. Although it is unnecessary for the manufacturer himself to delve into the fundamental laws governing visual perception, he should be in a position to determine whether or not the artist he employs is familiar with these laws and their relation to the sales value of a package.

Simply defined, sight is merely the action of light and color rays upon the visual field of the eye, combined with the nervous excitation of memory centers located in the brain, caused by these stimuli. Therefore, the most attractive package form is one that causes a pleasant visual sensation and stirs into instant activity one of the memory groups. The habits of association acquired over a period of time are a large factor in determining the most effective package form.

Certain color tones have, because of the velocity of their light waves, the ability to command instant attention. Yellow, orange and red packages on a shelf filled with packages in other colors wil be seen first because of the fact that they are saturate color possessing a high velocity. Frequently the color employed in the design of the package is instrumental in creating an impression of size. Tests have demonstrated that yellow packages presenting a large surface in white, yellow, orange or red appear much larger than those presenting the same area of space in blue, purple or black.

In packaging food products and many other kindred lines it is frequently desirable to select a package form that will give the appearance of being larger in size than it really is. In the choice of a package form for an expensive perfume the reverse is frequently employed to suggest the exclusiveness and rare quality of the product.

Judgment of relative sizes and shapes is the result of both sensory and intellectual activities plus

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the knowledge gained by actual experience in the comparison of objects within the field of vision at the same moment. At one time the ability to judge relative values of forms was considered by scientists to be inborn, but the results of later physiological tests have demonstrated that this mental attribute is gained only by visual experience.

Although the weight of the contents of a package, particularly in food products, is regulated by laws and custom, some packages, because of their shape and apparent size, appear larger than others. The use of a package which appears larger than it actually is cannot be interpreted as an attempt by the manufacturer to defraud the buying public. It is, rather, an appeal to the bargain-hunting instinct inherent in all those engaged in any type of commercial activities.

Because of the anatomical construction of the eye, observation of an object from side to side is more easily accomplished than from top to bottom. It is for this reason that short, broad packages and containers present a greater appeal than those of the tall, narrow variety. As there is a tendency in visual perception to follow beyond the outline of an object, a round container which presents no eye-arresting edge will appear larger than a square one, although the contents and actual area may be the same. It is possible, however, to include in the design of the package lines or arrangement of lettering that will produce the same effect, even though employed on a square container.

Protection

The first function of packages in the earlier history of this industry was protection of the product. More recently packages have become recognized as an important aid in merchandising and are being called upon to advertise and sell the product. In the main, however, in all branches of manufacturing the primary purpose of the package is protection.

Manufacturing centers are in many cases far removed from the point where the merchandise is sold and shipping problems enter into the selection of the proper package form. The size and shape of a protective container depends to a large extent on the character of the product to be packaged. Economy in shipping depends upon the selection of package forms that can be safely shipped over long distances without damage to the product and without loss through wasted shipping space. Packages in odd or irregular forms require special shipping cases and a great amount of shipping space is wasted, whereas it is possible to transport a large number of packages in the same space by the selection of simple forms. Shipping cases of standard sizes will hold many more packages in square and oblong shapes than oval, round and irregular forms.

Under existing retailing conditions the shelf space in the average grocery or chain store is limited, and for this reason the package form selected for food products must be one that can be easily stacked. Irregular shapes, particularly when the tops of containers are pointed or gabled, present a serious storage problem when shelf space is limited. A few of these difficult package forms have been successfully merchandised but the majority of them are unsuitable for food products. Toiletries, particularly in the grades retailing at high prices, are usually accorded more display space, and these products, because of their high retail cost and subsequent profit to the retailer, may be packaged in containers in odd and irregular shapes. In this instance it is frequently the novelty of the container that attracts attention and sells the product. Naturally, the rules governing the selection of package forms for food products also apply to toiletries, retailing at little profit to the retailer because these items are usually sold in large quantities and a plentiful supply must be stocked.

Conditions surrounding the use of the package also influence the selection of the package form. Shelf space and use by the customer under known conditions must be considered. Bottles containing face lotions and other toiletries must be of a shape convenient to hold in the hand as well as store in medicine chests and shelves.

Products which remain during use in their original container require a different form than those that are emptied immediately. Packages for spices and similar food products which are usually used directly from the container must be of a shape convenient to handle and of a size to store conveniently on kitchen shelves.

Jars in which salves or cold creams are merchandised must be of a size and shape which will easily permit the purchaser to use all of the product. Bottles containing olives and pickles must be constructed so that the contents may be removed without difficulty. Liquid products must be packaged in bottles from which they may be easily poured without the possibility of spilling.

Advertising

Frequently the selection of the proper package form is determined by its possible advertising value. Before the final decision is reached it is wise to consider the channels through which the product is to be advertised. As the different types of publicity demand different treatment of package forms, they may be separated into the following classifications:

A. Advertising in newspapers.
B. Advertising in periodicals.
   a. Black and white.

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b. Color.

C. Outdoor advertising.

a. Bill boards.

b. Car cards.

D. Dealer displays.

a. Window.

b. Counter.

c. Shelf.

E. Sampling.

A product which has been, or is to be, widely advertised through newspaper publicity does not require a package form large enough to carry an extensive advertising message if the advertising campaign is to be a continuous one. There is little need of cluttering the package itself with lengthy sales messages if sufficient advertising is done to familiarize the buying public with the uses and merits of the product. In this case the package need only function as a link in the merchandising chain and the printed matter on the package itself may be limited to the trade name, the name of the manufacturer and, occasionally, the sales slogan or other catch-phrase used in advertisements.

It is a well-known physiological fact that the normal span of attention is both limited and selective, therefore the most effective package form is one that provides an opportunity for sharp contrasts either on the package itself or with the backgrounds to be used in display, and presents a compact, poster-like, identifying feature. As it is usually impossible to govern conditions surrounding the display of the package itself, it is wiser to concentrate on the package rather than to depend upon the display for contrast.

If the package is to be featured extensively in newspaper advertising the form chosen must be adaptable to reproduction in black and white. Limited advertising space frequently necessitates sharp reduction in the size of the package and for this reason the design and lettering used must be sufficiently strong in intensity and legibility to reduce to the required size without sacrificing its sales value.

It is an accepted fact that reproductions of the package in colored advertisements are of great assistance in fixing the package in the minds of the buying public. The number of manufacturers employing this method is on the increase and their reports on the steady growth of sales volume attributable to this practice are a strong argument in its favor. If the package is to be included in colored advertisements the package form chosen must be suitable for reproduction in that medium. The balance in advertising layouts is a factor worthy of greater consideration than is usually accorded in the selection of a package form. Possible artistic effects in relation to backgrounds and advertising copy must also be considered.

In this form of advertising the effect to be gained by the use of color in the package design is most important. White, red, yellow and orange packages give an impression of size but in many instances these colors complicate the problem of the advertising writers. Simple color effects and limitation of the colors used will greatly reduce the cost of color advertising. Each added color to a package design not only adds to the cost of reproduction but detracts from the effectiveness of the package when reproduced in this manner.

The question of the amount of advertising material to be included in the package design is also a determining factor in the selection of a package form. In many cases it is wiser to include a package insert in the package than to include directions and other printed material on the package itself. The additional cost of this method is more than compensated by the additional sales value of the package.

If, however, recipes, directions or other printed matter are desired on the package itself it is frequently advisable to choose a square or rectangular package form. Either of these shapes presents a large, unbroken surface for the display of the trade name and three surfaces which may be used for the directions and other printed material. These shapes also possess the advantage of commanding sufficient surface on display shelves.

If the character of the product requires a round container it is usually wiser to isolate the sales messages in panels on the back or sides of the container. This allows a large, unbroken surface for the display of the trade name or other identifying feature which may be used merely to identify the product, allowing a wide space for contrast of color or shape to instantly establish the identity of the product.

Outdoor advertising of the package itself necessitates the same consideration of size and shape required by other color advertisements. In this instance, however, the more poster-like in appearance the package form is, the better. This form of advertising, appearing as it does to the public in motion, depends for its advertising value on flash messages. For this reason the more simple package forms are more readily remembered, and if the package chosen is to be displayed in this type of advertising an easily remembered package form developed in simple color effects will produce the best results.

The possibility of dealer displays must also be considered in selecting a package form. The type of store in which the product will be sold determines to a large extent the shape and size of a package. Naturally, a food product to be sold in crowded chain stores where display space is limited requires a more simple form than a perfume to be sold in ex-

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clusive shops. Gabled tops and irregular forms so complicate the problems of the already overburdened store manager that they are usually relegated to obscure corners, whereas the package in rectangular, square or round form will be granted sufficient shelf or window space to insure its full advertising value.

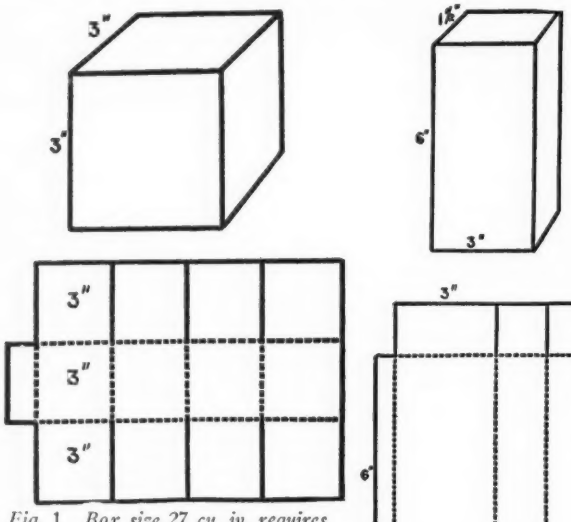

Fig. 1. Box size 27 cu. in. requires 108 sq. in. of boxboard

Fig. 2. Box size 27 cu. in. requires only 81 sq. in. of boxboard when this shape is used

Products of which sample packages are to be distributed should be packaged in a package form adaptable to reduction. This fact is most frequently forgotten and the sample is distributed in a package entirely different from that used to merchandise the product.

Tests have demonstrated that in many instances savings in container costs could be effected by a slight change in the shape of the package. As demonstrated in Figs. 1 and 2 the change in the shape effected a startling economy in the quantity of box board used in the package although the cubic contents remained the same. At the same time the new container because of its shape commanded more display space on the dealer's shelf and consequently secured better advertising for the product.

The same principle applies to cans and paper boxes. In the first instance it has been demonstrated that the simpler forms require less material and consequently cost less. While it is true that in the case of toilet articles retailing at a high margin of profit odd and irregular-shaped package forms frequently result in a larger volume of sales, it is nevertheless true that in products retailing at a low or medium profit the cost of the container is an important consideration. In addition to the savings effected in boxboard by the selection of simple forms there is also the saving in box papers and labor. In most instances paper-covered boxes are finished by hand the labor involved in covering a many-sided box is much greater than that employed in covering a simple form.

One of the most important considerations in determining the size and shape of a new package is the necessity of considering the type of packaging machinery available. Many designers entirely overlook this consideration and the manufacturer should be certain that the new package will be adaptable to the packaging machinery installed. Certain odd shapes in boxes, cans, bottles and jars are difficult to fill, label and wrap and for this reason should be used only where production is limited and hand packaging is possible. If automatic filling, closing, labeling and wrapping or cartoning is to be used, the new package should be selected with this factor in mind. It must be remembered that the cost of the package should take into account the expense of its production as well as that involved in material and service expenditures.

Typography for Packages

STAFF COMPILATION

ONE OF THE MOST IMPORTANT elements, and one of the most neglected, in the design of the package is typography. Used correctly it plays a very important part in stimulating the sales of packaged merchandise. Used incorrectly it renders ineffectual an otherwise effective package.

The purpose of this cursory study is to show how scientific methods may be made serviceable in handling practical problems of type selection and to present facts and principles of practical interest to the producers and advertisers of packaged goods.

The first step in the creation of a package design is to decide on the wording or type matter that is to appear on the package. This should be kept to a minimum.

For most packages, the type matter can be divided into three groups: (1) the name of the product; (2) the major selling point or points; (3) minor facts

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Preferred Package Type Faces

KABEL BOLD

GORY SPLENDOR
shivering into atomical

KABEL BLACK

Northern Railway
THE CUNARD LINE

FUTURA MEDIUM

Boundless Prospects
SIMPLE GARDENS

FUTURA DEMIBOLD

Earned Distinction
HANDSOME DOG

BODONI ROMAN

The Norman Period
LEWIS SINCLAIR

BODONI ROMAN BOLD

National Theatre
PERFORMANCE

ULTRA BODONI

EMBROIDERS
Show beautiful

BERNHARD CURSIVE BOLD

Students of Boston
United States

GOUDY EXTRA BOLD ITALICS

PROUD MOTHER
Beautifully Gowned

CASLON OLD STYLE

MAGNIFICENT
original type-face

LOUVAINE BOLD

Optimistic Subject
HISTORIAN

STYMIE BOLD

RETIRED BANKER
Magnificent Jewelry

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about the product and name of manufacturer. In the last mentioned group would be included the various uses of the product and directions. The most favored practice is to place this third group of type matter in a panel on the sides of the package. Sometimes it is printed in a small folder or booklet and inserted in the package.

In package typography, the trend is toward the sans serif or black type faces. This is due in large measure to their great simplicity and legibility. In fact, the prime requisite in the choice of a type face is *legibility*. Above all else it should be easily read. If it fails in this it is a poor type and the package suffers accordingly. Legibility depends upon a number of factors, all of which should be correlated in the creation of the package. Namely: size of type, amount of space surrounding it, color of background, the kind and texture of the package material, the size and shape of the package and similar mechanical factors.

Another quality is *simplicity* in type. In choosing a type the following questions should be considered. Does it "stick" in the reader's mind because of its simplicity or is it too involved? Does it offer a ready recall and identification? These should be taken into consideration, for the easier the visible impression is made in the mind of the consumer, the quicker will your packages sell. Simplicity in type makes for practicability in production and lessens the chances for mediocre printing. Eliminate anything tending to reduce forcefulness in the presentation of your message.

Getting attention or *display value* is a vital element in your choice of types. When one considers the number of packages on the shelves of a store, the reason for display value will be quite apparent. Your type face should make itself seen—should be outstanding and inviting. An important point to remember here is that type should not draw attention to itself as a type but only serve to make interesting that which it records.

According to some typographers, the type should convey a feeling of atmosphere and of appropriateness. Atmospheric type has been used effectively by a number of manufacturers and in many different ways. It makes a pleasing impression and, properly conceived, this impression can be effective in pushing the sale of the product. The appropriateness of type or lettering to the commodity in the package depends upon its "feeling tone," its "atmosphere" or psychology. Type may be agreeable or disagreeable to look at; it gives form to thoughts as well as to words, and each type face expresses a definite idea or feeling or creates a definite image. In other words, make your type talk! Make it express durability or strength, character and dignity, dependability or delicacy.

In conjunction with a proper degree of atmosphere one will find that an impression has been left—some form of identification has been established. When the need or desire for the product is aroused in the mind of the consumer, immediate identification will put your product under his or her arm.

There are a few definite rules to keep in mind in specifying type for copy on the package.

Lines that are too long cause extreme eye movements. When too short they cause a start and stop movement which produces eye fatigue. Try to see the beginning of your copy and the end at the same time and you'll strike a happy medium. Lines of equal length relieve eye fatigue.

Using more than two or three sizes of type destroys emphasis, makes reading more difficult, is slower and fatiguing to the reader.

In spacing be sure that the grouping of your thoughts "makes sense." Give yourself plenty of white space and be careful of the background of your body of copy.

Lower case letters are more easily read, tests have proved, because words are ready by shape and by their familiarity.

For effective typography remember that type faces constructed along simple lines with relatively few angles and corners are most easily read. Fancy and unusual faces should be avoided since they offer difficult reading.

Type selection for a package that has character, individuality, creates a favorable impression and reflects the product, is not a formidable problem—it calls for common sense and the application of proven advertising principles

The Use of Package Inserts

Package or bundle inserts may be divided into three general classes, as follows: The insert that goes into the original package sold to the customer; that which is placed by the retailer in bundles and packages that leave his store, and the insert that goes into a large container or bundle which is opened by the dealer. Also included in the list of devices which function similarly is the "outsert" which consists of a booklet or leaflet that is attached to almost any type of container.

Among the messages that can be carried with profit on package inserts are the following:

Refresh the mind of the buyer concerning the points that induced his first purchase of your product.

Tell the buyer how to use your product to the best advantage.

Tell the buyer of all the uses to which the product may be put.

Tell the buyer how to care for the product so that it will give the best service.

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Acquaint the buyer with other products that you make or sell.

Secure names of buyers for mailing list.

Induce the buyer to send for samples of other products that you make or sell.

Secure the names of friends and acquaintances of buyers for your mailing list.

Tell the story of careful and clean handling of the product in factory and workshops.

Give the buyer information about the size and character of the company back of the product.

Make clear to the buyer the care used in the selection of materials.

Counteract efforts of competitors.

Bring suggestions or information that will help you to improve your product or extend its sale to other fields.

Carry testimonials from other users to help strengthen the confidence of buyers.

The above statements relate to the value of the package insert as a merchandising factor in the distribution of goods and to the various functions which it may be expected to perform.

In every group of industry which concerns itself with the use of packages, there is an opportunity for increased sales in the proper utilization of the package insert. So much so that the latter has come to be regarded as almost an integral part of the package.

Color

By CARL E. FOSS

The International Printing Ink Corporation

THE SUBJECT OF COLOR has taken on tremendous concern in this day and age primarily because it is forcibly brought to our attention in a multitude of ways. In the past the use of color was restricted, due to the many difficulties arising in the handling of the color mediums. Now that color is available to a greater extent than before and its effect is utilized in all fields of endeavor, it is natural that we should become interested in its proper usage, an interest which becomes more vital as time goes on.

The use of color enters into the personal as well as into business and pleasure. At no time are we free of its presence. While civilization has given us a general color appreciation, too often in our attempts at color arrangement we overstep the mark and our results turn primitive. We are also aware of the effect of color on our minds and the manner in which color may be fitted to our moods. Usually we like color effects that are classed as harmonious, and resent hapahazard color arrangements.

In our economic and civic life, color plays an important part. Our attention is gained by color in contrast. Our purchases are also affected by color. Invariably when purchasing, an attempt is made to associate the color of the new article with the color of the articles already on hand. These attempts at color balance are continually being made by us all. We strive to balance color in the furnishing of our homes; we attempt the same thing in business. If we want to place a product on the market, we allow color to vie with utility.

Such universal use of color and our general color appreciation surely will benefit by a common language for color reference. At present too many different sets of terms are in use. Each, perhaps, may have its advantages in its own field, but, when colors specified by such terms are required in other fields, the terminology is hopelessly foreign.

The first step in color education for the layman would be the specification of color regardless of the way in which the color was produced. When this step is made, the others will follow in a more definite and reasonable manner. The advanced steps are found in chemistry, physics and physiology. The chemist can explain the production of natural and artificial pigments and dyes and, to a certain extent, their intermixture. The physicist can explain light theories, radiant energy measurements, etc., and the physiologist can explain the function of the eyes and allied nervous system in receiving these light impulses.

We may sum up the interests of all phases of science by saying that color is a sensation. Color is our interpretation of an excitation of the retina of the eye by light (radiant energy) which is transmitted through or reflected from some interfering substance which may selectively absorb that light. Everything we see is color. Color difference alone is responsible for form and shape.

Specification of Color

In the specification of color in which the layman is most interested, we must use three constants as follows:

1. Hue is the fundamental characteristic of color. It is the attribute by which we distinguish a red from a yellow, a green, a blue or a purple. This term has found universal use and acceptance in all fields of color and in all notations.
2. The second characteristic is relative to light

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Correlation Chart of Color Interpretation

1. *Light Values* 2. *Medium Values* 3. *Dark Values*

HUES	SYMBOLISM	CHARACTERISTIC	MOOD	INFLUENCE	TEMPERATURE
Red-purple	2 Battle 3 Heroic Virtues 2 Valor 3 Prowess	2 Stateliness 2 Impressiveness 2 Haughtiness	3 Cold 3 Chilly 2 Tragic	SUBDUING COLORS	COOL COLORS
Purple	3 Loyalty 2 Patience 3 Fidelity 3 Allegiance	3 Dignity 3 Royalty 3 Seriousness 3 Imperialness	3 Dark 3 Ceremonious 3 Cold, Grave 3 Austere 3 Pompous		
Purple-blue	3 Solemnity 3 Majesty 2 Reverence 2 Sublimity	3 Apathy 3 Harshness	3 Stern 3 Unyielding 3 Cold		
Blue	3 Truth 3 Consistency 3 Justice 2 Sincerity	2 Tranquility 2 Calmness 1 Expansiveness	2 Passive 3 Cold 3 Deep		
Blue-green	2 Peacefulness 2 Serenity 3 Placidity	2 Retiredness 3 Unexpressiveness	2 Sedate 3 Sober 3 Cold	TRANQUILIZING COLORS	
Green	2 Fruitfulness 2 Hope 2 Immortality 2 Prolification	2 Youth 2 Vigor 2 Life 2 Appeal	2 Cool-Passive 1 Refreshing 2 Restful 3 Quiet-Retiring		WARM COLORS
Green-yellow	2 Encouragement 1 Happiness 2 Success 1 Prosperity	1 Cheerfulness 1 Refreshfulness 1 Vivacity 1 Alacrity	2 Springlike 1 Gentle 2 Stimulating 2 Flush or Warm		
Yellow	1 Supreme Wisdom 1 Goodness 1 Inspiration 1 Prudence	1 Joyfulness 1 Gaiety 1 Merriment 3 Sickness	1 Warm 1 Light 1 Joyous 1 Active 1 Stimulating	EXCITING COLORS	
Yellow-red	1 Knowledge 2 Benevolence 2 Home 1 Light 2 Benignity	1 Liveliness 1 Warmth 2 Gravity 3 Sombreness 3 Strength	1 Mellow 1 Warm 2 Rich 2 Luscious		
Red	2 Love 2 Valor 2 Passion 2 Truth	2 Danger 2 Sanguinity 2 Fire 2 Anger	2 Intense 2 Fierce 2 Hot 2 Vital 2 Active 2 Exciting		
White-silver	Chastity Innocence Purity	Peace Modesty Reservedness	Dignified Clean Chaste		
Gray	Tribulation Humility Distress	Quietness Subduedness Repressiveness	Calm Serene Mild		
Black	Death Mortality	Gloom Darkness	Mournful Sad		
Gold	Richness Glamour Enchantment	Money Gold Glory	Glorious Powerful Distinctive		

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reflection. Several terms may be used to describe this feature, such as Value, Luminosity, Brightness, Brilliance.

3. The third characteristic is relative to light purity. Several terms may be used, such as Chroma, Saturation, Intensity.

Perhaps the best way in specifying color is to take the three dimensions given by Munsell, whose works are more easily available than others on the subject. He uses Hue, Value and Chroma. His definition of Value is given as the lightness or darkness of any color. Then Chroma becomes the weakness or strength of a color. A gray, accordingly, can have no hue and no weakness or strength, it possesses only lightness or darkness. The Value difference of certain colors may be generally divided into two major classes, i.e., tints and shades. Tints are colors in which white predominates; shades are those in which black appears. Pink is a high value red or a tint of red; maroon is a low value red or a shade of red. Other hues also follow this general scheme.

The correlation of these three dimensions may seem complex, but they may easily be understood if the method given below is followed.

If a heterogeneous combination of colors, i.e., all conceivable colors, is taken, the first logical step would be to separate the grays from the other colors. This gives two sections, Achromatic Colors (grays) and Chromatic Colors.

The smaller group would be the Achromatic Colors. These colors can be arranged in a vertical series from white at the top through a progression to black at the bottom. Ten steps of Value on a decimal scale are sufficient for most work. This clearly shows the difference in light reflection. The final arrangement of the Achromatic Colors produces a complete Value scale of gray. This sequence is readily understood and generally accepted by those who make use of color designation.

The logical arrangement of the Chromatic Colors then should follow the same general lines. If this is done, it will be found that all these colors can be set in groups which correspond with each step in the gray Value scale. All the colors in each group will then conform to one constant, i.e., relative lightness or darkness or Value.

Now that one constant has been completely established for all color and knowing that Achromatic Colors have only this one dimension, it remains to arrange the minor groups of Chromatic Colors according to their other attributes, i.e., Hue and Chroma.

When each group of these colors is placed in circle order, they will inadvertently be arranged in an orthodox rotation, showing the sequence of red to yellow to green to blue to purple and back to red. This arrangement gives a hue separation, but it will be found that certain colors of a definite hue appear more or less subdued when compared to others of the same hue, the Value remaining constant. This difference in saturation is notated as Chroma. The Chroma arrangement can be shown as spokes of a wheel with increasing saturation or Chroma ranging out from the hub. The grayed colors lie close to the hub and the strong colors at the ends of the spokes.

At various Values certain hues will be found to be of greater Chroma than others, a condition which varies throughout each Value step. At the higher Values, yellow will be of greatest Chroma; at the lower, a purple-blue will predominate. Other hues arrive at maximum Chroma at Value positions on a fairly direct line betwen these two extremes. By superimposing these three attributes a color solid is obtained in which every conceivable color will have a definite place.

As long as there is a decimal notation for Value it will be very much in order to have also a decimal notation for Hue. Starting with five fundamental hues, red, yellow, green, blue and purple, the intermediate hues will then be yellow-red, green-yellow, blue-green, purple-blue and red-purple. This number of hues gives a fairly smooth hue circuit. If it is desirable to know the complement of any hue it will be found to be exactly opposite, lying on a straight line which passes from the first hue through the gray axis.

Various types of color harmony may be found in definite geometrical order by such an arrangement. If an analogous harmony is desired, any combination of colors of neighboring hue may be used. If harmony by contrast is desired, colors of one hue may be used with colors of complementary hue. The complementary color can be split into its two neighboring hues if so desired. In fact, any symmetrical arrangement on this basis will be harmonious. If there is need to be exact about area relations, this, too, may be arrived at from these notations.

Many color problems may be solved by the use of notations of this kind. Of course, a standard set of charts showing definite steppings of color is necessary. This book of charts must show regular steps along a psychological line. The Munsell Book of Color is about the best work available, possessing all these qualities.

Color standardization has been carried on quite successfully in many fields by the use of Munsell notations with a surprisingly high degree of precision. In agricultural work, designing, printing and many other lines, a definite notation universally used will bring about the solution of almost every phase of color standardization.

Only by universal appreciation of this necessity and genuine cooperation and education along these lines can any color understanding be had.

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Ink in Package Making

By CARL E. FOSS

The International Printing Ink Corporation

WHEN A PRINTING INK is ordered in the production of a package, little or no consideration is lavished upon the innumerable functions expected of that ink. Yet, it is unconsciously assumed that, for the producing of an attractive and durable package, the following qualities will be present. The ink must reproduce the design with a fair degree of faithfulness of both color and detail. The design and color must be proof against not only the action of the elements, such as sun, heat, rain, etc., but must also resist the chemical action of the packaged product itself. The ink must also have a definite affinity for the stock upon which it is applied. It must dry well, producing either a glossy or a dull finish in accordance with the requirements. Then, too often, it is expected to stand up even if the stock on which it is used does not.

This seems a formidable list of requirements for printing ink to fulfill. However, if proper cooperation between ink maker and ink user is had, inks which will satisfy most of these requirements can be made.

While proper design for a package is a complete subject in itself, the color reproduction feature of such design is extremely important. When a design is accepted, the reproduction is decidedly an engrav-

PROPERTY TESTS OF COMMON PIGMENTS USED IN PRINTING INKS

Pigment	Indoor	Outdoor	Paste	Alcohol	Acid	Alkali
			Natural Inorganic Group			
Raw Umber	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Raw Sienna	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
			Artificial Inorganic Group			
Burnt Umber	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Burnt Sienna	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Cadmium Red	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
English Vermillion	Excellent	Good	Excellent	Excellent	Excellent	Excellent
Orange Mineral	Good	Poor	Excellent	Excellent	Good	Good
Chrome Yellow	Excellent	Excellent	Excellent	Excellent	Good	Poor
Cadmium Yellow	Excellent	Good	Excellent	Excellent	Excellent	Excellent
Zinc Yellow	Excellent	Poor	Fair	Excellent	Poor	Poor
Chrome Green	Excellent	Excellent	Excellent	Excellent	Excellent	Poor
Iron Blue	Excellent	Excellent	Excellent	Excellent	Good	Poor
Ultramarine Blue	Excellent	Fair	Excellent	Excellent	Poor	Excellent
			Organic Group			
Bismarck Brown	Fugitive	Poor	Poor	Fair	Poor	Poor
Maroon	Excellent	Fair	Excellent	Good	Excelient	Poor
Madder Lake	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Rhodamine	Fugitive	Poor	Poor	Poor	Fair	Poor
Rhodamine (Perm)	Good	Good	Excellent	Poor	Excellent	Good
Eosine	Fugitive	Poor	Poor	Poor	Poor	Poor
Lithol Rubine	Excellent	Poor	Fair	Good	Poor	Poor
Lithol Red	Good	Fair	Excellent	Good	Excellent	Poor
Scarlet Pulp	Fair	Poor	Poor	Excellent	Poor	Poor
Pigment Scarlet	Excellent	Fair	Poor	Excellent	Poor	Poor
Para Red	Excellent	Excellent	Excellent	Poor	Good	Excellent
Toluidine	Excellent	Excellent	Excellent	Fair	Excellent	Excellent
Red Lake D	Good	Fair	Excellent	Good	Poor	Good
Red Lake C	Fair	Fair	Excellent	Good	Excellent	Fair
Fire Red	Excellent	Excellent	Excellent	Fair	Excellent	Excellent
Permatone Orange	Excellent	Excellent	Excellent	Good	Excellent	Excellent
Orange II	Fugitive	Poor	Poor	Good	Poor	Poor
Hansa Yellow	Excellent	Excellent	Excellent	Good	Excellent	Excellent
Tartrazine Yellow	Poor	Poor	Poor	Excellent	Poor	Poor
Quinoline Yellow	Poor	Poor	Poor	Fair	Poor	Poor
Naphthol Yellow	Poor	Poor	Good	Excellent	Poor	Poor
Acid Green Lake	Fugitive	Poor	Poor	Good	Poor	Poor
Malachite Green (Perm)	Good	Fair	Excellent	Good	Excellent	Excellent
Brilliant Green	Good	Fair	Excellent	Good	Excellent	Excellent
Setoglaucine	Good	Fair	Excellent	Fair	Excellent	Good
Patent Blue	Fugitive	Poor	Poor	Excellent	Poor	Poor
Methylene Blue	Fair	Poor	Poor	Excellent	Poor	Fair
Induline Blue	Fair	Poor	Excellent	Fair	Good	Good
Indigo	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Alkali Blue	Excellent	Fair	Excellent	Poor	Excellent	Fair
Victoria Blue	Good	Good	Excellent	Poor	Excellent	Excellent
Methyl Violet	Fugitive	Poor	Good	Poor	Poor	Poor
Methyl Violet (Perm)	Good	Good	Excellent	Fair	Excellent	Excellent
Alizarine Purple	Fair	Poor	Poor	Excellent	Poor	Poor

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ing job. However, the reproduction of the colors of that design is another factor. It is at this point that inks having characteristics in every respect suited to the job must be chosen. The pigments used in these inks should be so selected as to give, without sacrificing other properties, the best color approximation possible. It would be well to list some of the properties of the various pigments used in printing inks, thereby explaining the color limitations. While the compatibility of pigments with vehicles must, because of its complexity, remain a problem of the inkmaker, a general rule governing this may be stated as follows: generally the natural earth pigments make inks of poor working qualities; the artificial inorganic pigments make inks of good working qualities, and the organic pigments make the finest working inks.

The other characteristics of pigments are so distinctive that no general rule fits any case; the variation is so great that any attempt at correlation must be in table form with many descriptive terms to explain the relative degree of failure. Within reasonable limits, a table covering only general families of pigments with but certain important tests is all that is possible.

As above indicated, the pigments are divided into three definite classes: Natural Inorganic, Artificial Inorganic and Organic. The usual tests for such pigments are: permanency to light (showing both actual outdoor tests and indoor fadeometer tests), acid and alkali, alcohol and paste.

In the acid test a weak acid such as vinegar is used; in the alkali test a two per cent caustic is used. The alcohol test is for an exposure of short duration as in spirit varnishing, while the paste test is made by stroking a neutral paste over the printed areas. Other tests, such as wax, lard, water brine, baking and so forth, could be added as, with no limit set, property tests can go on indefinitely. In these tests the degree of bleed or failure is recorded in progressive terms such as fugitive, poor, fair good and excellent.

While we have so far covered many properties of printing inks, there are others which are also important. If transparent inks are required to attain certain color effects with a minimum number of impressions it will be found that, if these points are gained, other characteristics may be lost.

All in all, suiting an ink to a job shows itself to be more of a problem than would be evident in a casual observance of the process. Although most calls for ink come to the inkmaker with almost no other data, he invariably takes it upon himself to find out as much about the job as is possible. With all this information on hand, the ink can be made correctly and the possibility of ink failure greatly diminished. Ink manufacturers are prepared to cope with these problems and extend every cooperation.

Printing Plates for Packages

By B. R. PRESTON
Crescent Engraving Company

ANY DISCUSSION of the making of engravings must of necessity be tinged with technicalities that usually are difficult for the average buyer of engravings, in dealing with the production of packaging engravings to understand.

First let us consider the general run of commercial engravings—a deviation from specified size of 1/32 in. or 1/16 in. is seldom of any consequence. If the work is halftone, a fine screen is used—usually 133 lines to the inch—which fine screen alleviates the engravers problem of retaining defination and fine detaiis in his reproduction. In many cases the printing is done directly from the original engravings rather than from electrotypes, which eliminates the necessity of particularly deep and cleanly etched plates, as is the case when the engravings must be electrotyped. The usual commercial job is carefully made ready and printed on a good grade of enamel paper with a superior grade of ink. With ordinary care on the part of the engraver and printer, good results are not difficult to achieve.

Consider now the requirements which the packaging plate must meet. Even though the negatives the engraver must use in producing a job will stretch, shrink, or distort, and the metal which he uses will change size as it is repeatedly annealed during the etching process, the experienced packaging engraver will deliver plates within less than 1/64 in. of specified size. Can anyone excuse a packaging job on which the design misses the score by over 1/32 in.? If the packaging job requires the use of halftones, a coarse screen is often used—100 lines to the inch or coarser—to print successfully on carton board or bread wrapper stock, where the surface is rough and uneven as compared to enamel paper. Producing a faithful reproduction with these coarse screens requires special handling and re-etching that is seldom necessary with the fine screen job. Carton board will vary in caliper on a single sheet as much as 3/1000 in., which deviation no amount of make-ready can correct. The carton printer must then add enough extra "squeeze" to the impression to al-

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low for the deficiencies of the stock. To do this and still produce good printing, he must use plates that have been etched deep and clean, that will not fill up with ink, and that will stand the strain of this extra pounding. Packaging work is usually printed from electrotypes, which means the engraver must deliver plates that will electrotype successfully, without "etching shoulder" or "undercut" or "dirty bottom." The specialist knows and understands these special requirements.

The production of electrotypes for packaging use, while apparently not as involved as the making of art work and engravings, is nevertheless one of the most important links in the chain. It is the final step in the production line, and unless extreme care is maintained in this branch of the work, all of the skill and refinements put into the art work and engravings is just water over the dam. The plated shell of the electrotype must be of sufficient thickness and tough texture to deliver thousands upon thousands of good impressions in spite of the abrasive action of ink rollers, rough surfaced stock and the punishment of added "squeeze." The moulding and subsequent electro-plating must faithfully reproduce all detail of the pattern, however fine, and the careful electrotyper makes an issue of this point with his workmen. The backing metal must be sufficiently elastic to prevent the possibility of crystallizing and breaking on the press, but at the same time hard and tough enough to stand up under the steady pounding of the impression without "going down" or losing some of its thickness and uniformity—a difficult combination. In this regard particular electrotypers have found it imperative to use a backing material made to a specific formula from virgin metals. The re-smelting of old plates, worn out batteries, and junk lead may be satisfactory for commercial electrotypes, but it can not be used successfully for packaging plates.

The finishing of the plate must be done with extreme care to preserve halftone dots and fine details in their original value. The experienced electrotyper to the packaging industries, will deliver precision rectified plates to an exactitude of 1/1000 of an inch, and will properly notch his plates for ease of nesting on the press.

Exact size, which is of such paramount importance on most packaging work, often presents a serious problem in the production of electrotypes; and your electrotyper may—with a large sigh of resignation—point to one of the notes on his price scale, which in effect reads, "Electrotyping is not an exact science, and we can not be responsible for the natural shrinkage in our plates." All of which is true. But a few plate makers have developed ways and means of eliminating this natural shrinkage, and every day electrotypes are produced the exact size of the patterns from which they were made, that will print in register inter-changably with the patterns—and this regardless of whether the electrotypes are made flat or curved for rotary printing.

There are organizations which, through years of association with and experience in this specialized type of work, have learned the real significance of good designs and printing plates for packaging use. They have learned to avoid the difficulties and pitfalls lying in wait for the inexperienced when attempting to slide through a piece of work because it is "just another package job." These difficulties are costly in re-makes, time, and general results; and it is the organization using the packages who eventually, in one way or another, pays the fiddler.

Adhesives in Packaging Operations

By D. V. WILLIAMSON

Williamson Glue and Gum Works

IN THE DEVELOPMENT of modern packaging, adhesives play an important part. Their work is done in such a silent and prosaic manner, however, that frequently they do not receive the attention to which their important function really entitles them.

Consider some of the packaging operations of today where adhesives are used:

Manufacture of set-up paper boxes.
Gluing of folded paper boxes.
Manufacture of paper tubes and cans.
Sealing of individual cartons after they are filled with goods.
Wrapping filled cartons with printed paper labels—under either the loose wrap or the tight wrap method.
Wrapping filled cartons with transparent cellulose material, either plain or moistureproof.
Manufacture of bags and envelopes using paper or transparent cellulose material.
Labeling of glass bottles.
Labeling of wooden boxes, crates, and barrels.
Labeling of tin cans.
Laminating metal foil and transparent cellulose sheets to paper.
Sealing of fibre and corrugated shipping cases.

The adhesive situation on these operations is complicated by many factors, among which are: the

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nature of the surfaces to be glued; the method of applying the adhesive, and the speed of the operation.

Adhesion, primarily, is a matter of surfaces. If an adhesive is not chemically attracted to the surfaces it is to join together it is useless for that operation. There is no such thing as strength in an adhesive unless the surfaces to be glued together are included in the thought. For instance, an animal glue which makes a joint in a piece of furniture that is actually stronger than the wood itself cannot hold a spot label on a tin can twenty-four hours. The label would drop off when the glue dried because the surface of the tin repulses animal glue instead of attracting it, and all of the dried glue would be found on the paper label which fell off the can.

A generation ago the only kind of glue in general use was animal glue. This product is made largely from the hides and bones of animals and is an exceedingly useful commodity in many lines of industry. It has, however, some inherent characteristics which make it of limited value and use in modern packaging.

In the last ten or fifteen years there has been a great advance in the technology of an entirely different class of adhesives often referred to as vegetable glues since they are derived from vegetable rather than animal sources; chiefly from corn and tapioca. These products can be used cold and are odorless and the vast majority of the labeling and sealing operations on packaging machinery are performed by such adhesives. When used with most kinds of paper or box board they develop a strength of joint in excess of the strength of the materials they join together. They possess, moreover, many other most desirable properties for machine operation.

Adhesives for Transparent Cellulose

Transparent cellulose wrappings are now being employed in practically every phase of packaging, and with them there has developed an insistent demand for suitable adhesives to use with them. To meet this demand has not been easy because of the many variables and difficulties present.

With plain cellulose sheets a careful chemical balance must be present in the adhesive used as otherwise the adhesive will attack the sheet and embrittle and weaken it. Excessive puckering of the sheet at the glued joint is another item that will occur if the adhesive is not designed for its delicate purpose.

In gluing paper or box board, thin films of adhesives are desirable; with plain transparent cellulose sheets, on the other hand, thick films of adhesive give stronger joints.

It makes a difference, from an adhesive standpoint, whether the operation is that of joining the plain transparent cellulose sheets to themselves, or to paper or to box board. An adhesive that gives the best results in the first instance may not also properly perform in the latter case.

With moisture-proof cellulose sheets other adhesive difficulties arise. Perhaps the most troublesome is to produce sufficient initial tack. With few exceptions adhesives for the moisture-proof sheets do not offer as quick initial tack as is possible in adhesives for the plain sheets, or with paper or box board. This deficiency in initial tack is very cleverly offset in the design of some machines by causing the freshly glued joint to pass electrically heated hot plates, thus immediately enhancing the tackiness. Proper adhesives yield fast production when this method is employed.

Here again, with moisture-proof sheets, it makes a great difference as to whether the operation is to join the sheets to themselves or to paper or to board. Some adhesives, which will join the sheets together, have no utility whatever in joining a sheet to paper. It is possible, however, in using the proper adhesives to join the moisture-proof cellulose sheets to themselves or to paper or to board, or to waxed board.

Some other considerations that offer peculiar difficulties with adhesives for the moisture-proof sheets are odor, color, and non-stringing characteristics.

Very satisfactory adhesive results with the moisture-proof sheets are being obtained, however, in widely divergent industries and meanwhile constant research is producing better and better adhesives.

Characteristics of Adhesives

Adhesive operations are so diverse in modern packaging methods that there is no such thing as one best glue, any more than there is one best paint, for example. There is probably one best kind of paint for any particular operation; similarly with adhesives.

This article is concluded by listing the more important characteristics which users of adhesive must consider. For some operations one or several of these items are of prime importance; the "best" adhesive for any particular operation is that one with the best balance of all the factors for the particular operation it has to perform.

Chemical attraction (not repulsion) to the surfaces to be glued together.

Initial tack is usually more important than quick set because if an adhesive has initial tack sufficient to hold a seal down at once and keep it down, the time interval for ultimate setting is relatively unimportant.

Quick set is important where the package is subjected to stress as soon as it leaves the gluing machine—as is often the case with fibre or corrugated shipping cases.

Property of being used without heat.

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Freedom from odor is important with food or other products susceptible to odor absorption.

Non-stringing characteristics are particularly important on a recipocating type of machine which carries glue from a roller over to the package. On "straight line gluing" as on carton-forming machines this is relatively less important.

Property of increasing the tackiness and hastening the set by application of heated plates to the glued joint.

Non-foaming characteristics are important details on high speed machines.

Proper viscosity: Various machine requirements run from adhesives as free flowing as water to heavy bodied pastes that will not flow at all.

Color on transparent wrappings is of paramount importance.

Flexibility is sometimes necessary, other times not.

Being neutral in chemical action is necessary to prevent discoloration of printed wrappers and labels, actual deterioration of wrappers or disintegration of metal containers. These conditions sometimes are only noticed after a considerable time interval.

Permanency of joint: Weather and climatic conditions vary greatly and tend to affect the strength of some joints. A good adhesive will perform its function and make a good bond regardless of such changes.

Waterproof qualities are sometimes very essential.

Keeping qualities: Proper adhesives do not deteriorate with age.

Cost: This last item, in the matter of adhesives, certainly belongs in the last place in any list. If packaging manufacturers paid twice the prevailing prices for adhesives, the cost of this item would still be very small as compared with other items of packaging expense. But an adhesive that fails to perform its function, that slows up a production line, or stops it altogether, that lets packages open up on customers' shelves a thousand miles away and six months after shipment, that gradually discolors labels or corrodes tin cans would be an expensive item to the packaging company if it paid nothing for it.

The manufacture of adhesives is an intricate business and the best policy for the owner or operator of modern, costly, high speed packaging machines is to state his particular problem in all its details to a reliable adhesive manufacturer who can be of real help to him out of his experience and who can supply him, month in, month out, with suitable and uniform products.

Waxed Papers

WAXED PAPERS are generally divided into three large classes. There are, of course, many subdivisions of these three classes; but for practical consideration these general classes are as follows:

Dry Waxed Sulphite: Impregnated with paraffine of a relatively low melting point. Carries little or no surface wax and is dry to the touch. Not entirely proof against water, vapor and air. Such a wrapper is a protection against contamination by handling or contact and, to a moderate degree, against changes in moisture content. Is not self-sealing on application of heat. Its use is indicated in many special instances.

Waxed Sulphite: A heavier coating of paraffine with correspondingly greater resistance to the passage of air and of water vapor. It is self-sealing on application of heat. Used as a wrapper for many products, but especially useful as a liner or divider in package goods.

Self-Sealing Waxed Paper: Heavily coated with paraffine of high melting point, skillfully applied so that through the application of heat, the coating will fuse at folds and openings to form a container, which is, to a high degree, airproof, moisture-proof, odor-proof and insect-proof.

Dry waxed papers are good "twenty-four-hour sheets" and admirably suited for use by delicatessen stores, groceries and meat markets as a covering and wrapping for moist and greasy products which require protection only for a short period of time.

Waxed sulphite, unlike vegetable parchment paper, is neither waterproof nor greaseproof but, as pointed out, self-sealing waxed sulphite is airproof where parchment is not.

The use of waxed wrappers is being rapidly extended. New uses are constantly developing and with these new uses, variations in type of wrapper must naturally follow. Many industries and marketing practices have been changed through the adoption of protective and retentive coverings. Products of perishable or seasonable nature have become year-round staples. The question, "Is it fresh?" has become not a question of age, but of protectability in wrapping and, as such, merits consideration.

The varied uses of waxed paper of all grades are practically unlimited. While originally waxed paper was designed as a protective wrapper for food products, it has now extended its field of usefulness into a great number of industries. Many manufacturers have found that waxed paper fills a long desired method of protection against various factors that have had a tendency to deteriorate their products.

Another valuable property of waxed paper is its insulation value. Any food that is subjected to rapid temperature changes deteriorates quickly. An ice

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box is valuable not because it keeps food cold but because it prevents food from being subjected to rapid changes of temperature. Waxed paper performs a similar function.

Of recent years the metal trades have found that waxed paper is a good protector against rust and corrosion, due to its air- and moisture-proof protection qualities. This is especially true when a proper inhibitor is used. Laboratory tests show the protective qualities of waxed wrapped packages of food products against insect infestation, and the large use of waxed paper by progressive food manufacturers indicates that they realize the necessity of proper protection of their products.

Recent developments have made possible the production of waxed sulphite and waxed glassine of a transparent nature, which thereby insures the user of the full advertising value of his printed carton, as the reading matter can easily be read through the waxed paper wrapper. It creates an individual showcase for each package. Any product which it is desirable to have safeguarded from air, moisture, odor and rapid temperature changes can best be protected by using the proper grades of waxed paper.

Many factors enter into the selection of the proper type of wrapper for each individual product and the development of such wrappers has been, for some years, the subject of intensive scientific research. Chemical changes, moisture content, retention of aroma, attack by insects, fermentation and countless peculiarities in the product to be wrapped are to be considered. The services of fully equipped laboratories of various waxed paper manufacturers are at the disposal of users of waxed paper to assist in determining waxed paper problems.

Genuine Vegetable Parchment

THERE ARE ESSENTIALLY two kinds of parchment, animal and vegetable. Animal parchment is the prepared skins of animals, usually sheep, and has been used in the past chiefly for documentary purposes. Vegetable parchment, as the name imples, is basically of vegetable origin. Pure vegetable parchment is semi-transparent, odorless, insoluble, greaseproof and tasteless, and protects the products so wrapped from the absorption of foreign odors and tastes in the surrounding atmosphere.

Everyone who has had to deal with moist, delicate, perishable food products such as butter, ice cream, fresh meats, fish, etc., appreciates that their marketing value is considerably elevated by using the proper wrapper.

Butter is one of the most delicate of food products and is exceedingly susceptible to contaminating influences. Realizing this fact, every precaution is taken in the manufacture of vegetable parchment to have the product reach the consumer in as pure and sterile a condition as it is humanly possible to make it under operating conditions. Even so, it is admittedly good practice to subject the butter wrappers, tube liners, and circles to the action of boiling water or boiling super-saturated salt brine immediately before using. The effect of the above treatment is twofold, the heat destroying the mold spores that may adhere to the vegetable parchment, and the brine adhering to the vegetable parchment helping to inhibit growth of mold germs that may be in or on the butter.

One can readily understand that this extremely important preventative measure against mold infection would not be possible if ordinary paper were used. Under this treatment the paper would disintegrate to a pulpy mass and be rendered useless as a food wrapper. However, one of the outstanding properties of pure vegetable parchment, its insolubility, renders it extremely adaptable to this procedure. Then, too, this inherent quality of vegetable parchment, the fact that it does not disintegrate in contact with moisture, makes it possible for the ultimate consumer not only to remove the wrapper intact, but also, if only a portion of the product is to be used at one time, to rewrap the remainder, thus preserving the original good qualities of the butter until entirely consumed.

The property of butter to absorb readily foreign odors and acquire an unpleasant taste makes it imperative that a butter wrapper shall be odorless and tasteless. Pure vegetable parchment is odorless and tasteless and these characteristics unquestionably recommend its use to the packer of butter.

Butter tends to lose moisture during transportation and in storage. Aside from the reduction in actual value due to the diminished weight through loss of moisture, excessive leaking may injure its flavor. Vegetable parchment, being impervious to moisture and air, not only reduces this shrinkage to a minimum, but in storage prevents, to a large extent, losses incurred through contact with air, which causes deterioration of butter through oxidation or bacterial action, or both. Vegetable parchment-wrapped butter is also protected from the direct action of light, the tendency of which is to intensify bacterial action.

The general widespread demand for clean food makes it necessary for the producer to market his product in as cleanly and attractive a manner as possible. The translucency of the vegetable parchment wrapper presents the butter, on removal from the

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carton, in a clean, wholesome and appetizing condition. When printed with colorful designs of the various brand names in brilliant fast-color inks, vegetable parchment has sales appeal as well as protective qualities. Then, too, the print may be handled with facility because the fatty constituents of the butter have not permeated the parchment. It is the predominating characteristics of pure vegetable parchment briefly outlined above that have earned for it the distinction of being the best protective wrapper for all moist food products.

Another extensive use for genuine vegetable parchment is in the packaging of various meat products such as smoked meats, meat loaves, etc.

Vegetable parchment can be made into bags or envelopes. It is also fabricated with cardboard in box form as liners. Manufacturers of parchment maintain special research departments.

Glassine Papers

GLASSINE PAPERS, from the standpoint of the protection afforded to the products wrapped or otherwise contained in them, possess the following qualities:

Greaseproof	Airproof
Greaseless	Moisture-proof
Dustproof	Economy

Considering adequacy of application, they are easily printed, readily gummed, furnished in either rolls or sheets, obtainable in various weights and can be successfully and economically used in automatic wrapping machines.

With respect to the merchandising properties of glassine papers—that is, their ability to attract attention and obtain sales for a package—the quality of transparency is undoubtedly the greatest argument for their use. This quality holds true whether the papers are plain, embossed or furnished in colors. Glassine papers likewise offer an opportunity for a wide diversity of design, either as a background for labels or other decorative features that may be incorporated in the package assembly.

Although recognized as an ideal wrapping agent for many purposes, it was found that with the development of the packaging of foods of a perishable or semi-perishable nature, better protection is given such articles when the glassine is waxed. Treated with a coating of tasteless and odorless paraffine wax the glassine becomes a most effective protective wrapper, for in addition to the greaseproof, dustproof and transparent qualities it becomes moisture-proof as well.

Other waxed papers are used extensively by the manufacturers of various food products; but waxed glassine has proved itself superior for certain commodities so that, in several instances, it has supplanted other waxed papers. For instance, the baking industry has adopted waxed glassine as practically a standard wrapper for cakes, cookies, etc., within the last five years.

The best grade of glassine paper as commercially produced today is comparatively strong, flexible and pliable. When waxed it becomes self-sealing and its transparency is enhanced. Used as an outside wrapper for a printed carton it presents a glass-like appearance through which the finest print is plainly legible. This results in the maximum advertising and sales value of the well-printed cartons which are coming into favor in present-day methods of packaging and merchandising as practiced by the various industrial groups.

Further considerations which admit the ability of glassine papers to perform package functions are evidenced by the fact that these papers have been successfully used, individually and collectively, as wrappers, dividers and liners for cartons, cans and other types of containers as well as for separate or individual wrappers, applied directly to the product and forming thereby the package itself. Furnishing an ideal wrapping for many purposes, and due to their improved quality and adaptability to packaging operations, the use of glassine papers has become increasingly popular in the packaging field and promises to become even further extended.

During the past year experiments have been conducted toward the development of greater transparency in glassine papers as well as in the development of moisture-proof sheets.

Early in the development of packaging, it became apparent that glassine was, in many ways, ideal for machine wrapping; it was inexpensive and it filled the bill nicely as to the requirements of appearance and protection. The advantages of glassine wrapping were quickly realized by various industries, and a demand for wrapping machines to use glassine sprung up. This had been foreseen by the wrapping machine manufacturers, and they were ready with a number of models in lines of automatic equipment to handle the packaging of various sizes and shapes.

Many different types of machines have been built for wrapping these different types of packages. For the most part, these machines are built for one size and one type of wrapping only, although certain types are more or less flexible. Some types are faster than others, but an average speed of all types would be about 100 packages per minute.

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Trade Customs of Glassine Division, American Paper and Pulp Association

Basis Weight: The term "basis weight" as used herein shall be defined as: "The weight in pounds of 500 sheets of a size 24 in. by 36 in."

Marking: Each package, if marked, shall be stenciled or labeled by the manufacturer with the actual contents, size, basis weight and count.

Cores, Plugs and Wrappers: On ream wrapped paper, the weight of the paper including the ream wrapper shall be taken as the net weight. No allowance shall be made for the weight of cores, plugs and wrappers on glassine paper in rolls or bundles. Returnable cores should be deducted from weight and charged as a separate item. Frames, cases and cartons should not be included in net weight.

Acceptances: Acceptances of orders are contingent upon uncontrollable causes of delay or prevention.

Quotations: Quotations, unless otherwise stated, are for prompt acceptance and are subject to change without notice. All quotations shall be made on a basis of scale weight.

Differentials: A—Except in the case of sales for export, prices shall include cost of all types of packing. B—Prices shall be the same for both sheets and rolls, except rolls of less than 3 in. in width, for which there shall be an extra charge. C—Prices quoted shall apply to orders of 500 lbs. or over. A differential of 2 cents per pound shall be charged on all orders not amounting to 500 lbs. D—Prices quoted for each grade shall be the same for all basis weights from 25 lbs. to 40 lbs. inclusive. A differential of not less than 1½ cents per pound shall be added to this price when a paper of the same grade is required, but of a basis weight of less than 25 lbs. This differential shall not apply in the case of special grades such as those which are utilized for window envelopes, etc.

Carload Lots: Unless otherwise specified a carload of paper shall be considered as 36,000 lbs. or not less than the minimum carload weight specified in the railroad regulations, at the point of shipment.

"Make and Hold" Orders: All "make and hold" orders must specify an ultimate date of shipment at which date goods are to be billed and the invoice taken to account by the customer, whether goods are ordered shipped or not.

Routing of Shipments: Shipments will be routed at carrier's option unless otherwise specified by customer.

Deviation from Basis Weights: A delivery of plain or embossed glassine, which averages not more than 5 per cent over or under the specified basis weight shall constitute a good delivery on an order and shall not be subject to rejection or allowance on that account. All billings shall be made on a basis of scale weight.

Variation on Quantity Ordered: Over-runs and under-runs shall be accepted subject to the following possible variations, which shall constitute a good delivery and be accepted by purchaser as such.

Less than 5000 lbs.—20 per cent over or under

5000 lbs—not exceeding 10,000 lbs—15 per cent over or under

Over 10,000 lbs.—10 per cent over or under.

When quantities are definitely limited, the combined variation shall apply above or below the limit specified. For instance, in the case of an order for "not less than" 5000 lbs., a delivery of "not more than" 7000 lbs., and in the case of one for "not more than" 5000 lbs. a delivery of "not less than" 3000 lbs. shall constitute good delivery.

Delivery Point: Delivery point is on board cars at place of manufacture.

Cancellations or Changes: Cancellations or changes, on any paper being specially made to order, will be accepted only if the paper is not actually in process of manufacture, or made, at the time of the receipt of notice regarding the cancellation or change.

Claims: For the mutual protection of both buyer and seller, it is agreed that:

A—No claims shall be allowed after paper has been converted. However, experience has shown that exceptional cases occasionally arise where the fault is clearly with the mill and where an absolutely literal enforcement of this custom would work injustice and hardship to the buyers. It is, therefore, understood that mills will enforce the spirit of this custom, deciding exceptional cases upon their merits and according to the rules of equity.

B—Claims for loss, shortage or damage in transit will be dealt with in conformity with the bill of lading.

Terms of Sale: Settlement for all sales shall be made not later than 31 days after date of invoice. When a settlement is made not later than 30 days after date of invoice a cash discount of 2 per cent shall be allowed on the amount billed for paper. When several invoices fall due in any one month, the date of payment shall be figured from the average date of said invoices.

Artificial Leather for Boxes

One of the types of fabrics from which good results can be expected is artificial leather. This is a standardized material, the base of which is cotton fabric, to which is added a coating of pyroxylin. It is pliable, fairly tough, moisture-proof, greaseproof and practically stain-proof inasmuch as it can be washed. This washable quality is important in the manufacture of boxes which are distributed to retailers for sale, display and stock, in-

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asmuch as artificial leather does not scuff from handling and if it becomes soiled can be restored to its original newness by wiping with a moistened cloth.

Artificial leather is made up in single color, two colors or in many color effects, which are further embellished by embossings ranging from the grains of leather to floral, modernistic or geometrical designs. Likewise, it can be made in a dull or a bright finish in all colors, as well as in any of the metallic shades, according to requirements.

Artificial leather is not by any means new to manufacturers of boxes. It has been used considerably for de luxe or gift boxes by many national advertisers for an entire range of products; the color, the pattern and the weight of the fabric being determined by the type of container designed. Artificial leather is as workable as any of the better papers and has been successfully used in producing boxes simulating the appearance of leather cases, treasure chests, bound volumes, or any of the more conventional forms.

Packing Pads

Packing pads consisting of a kraft wrapper filled with straw or wood excelsior have been a staple packing material for years. During the last year a paper excelsior pad with sealed ends was developed. There is now no possibility of the filling sifting out and the absence of chips and hard wooden curls has eliminated marking. For furniture, ice-boxes, stoves, toys, tile, novelties, electrical appliances, etc., packing pads give excellent protection at a minimum cost. They are manufactured in all sizes from 3½ in. x 6 in. up to 15 in. to 72 inches.

Paper Excelsior

Laboratory tests have shown that paper excelsior absorbs up to 50 per cent more of the shock than wood excelsior. Actual packing tests showed time savings of 15 to 20 per cent. Despite these qualities the price of paper excelsior in the past curtailed its use. However, the last year has seen the price decline, due to large scale manufacturing to a point where some grades are more economical than wood excelsior.

Paper excelsior impregnated with mineral oil reduced scald on fruit in storage from 65 to 4 per cent, according to the Department of Agriculture. This has made possible the packaging of produce without wrappers which heretofore destroyed the eye appeal of the fruit itself.

More and more food, cosmetic and novelty manufacturers are using brilliantly colored paper excelsior to dress up their packages. Notable examples have been Heinz, Armour, Beech Nut and Kraft Cheese.

Crepe Wadding

Crepe wadding is extensively used as a packaging adjunct in the packing of tablets, capsules, ampoules, and various pharmaceuticals, cosmetics, bottled goods, scientific instruments, fragile and highly polished specialties. Such wadding to meet the several requirements should be white, soft, of dependable consistency in thickness and grade and be highly absorbent. Crepe wadding absorbs sixteen times its own weight in moisture. It may be obtained in rolls, sheets, and pads.

For liquids sampling or shipping liquids by mail, domestic and export business, to meet the requirements of the Postal Regulations and the necessities of protection in a high degree, as well as offering light weight and other advantages, absorbent crepe wadding is an ideal packing.

This material, provided in various thicknesses and paper backed, ready for use, is also utilized for box top padding. Among the economies which have been pointed out by companies who have used this padding are the following: due to the paper backing and the flatness and uniformity of sheets, it can be readily jogged in a cutter, while most padding has to be laid out separately, each sheet at a time; the paper backing eliminates the need of placing a padding and a manila sheet on separately when they are applied at the wrapping machine.

Two developments in csepe wadding, of interest to the designer and buyer of packages and supplies, have occurred within the last two years. First a new form fancy corrugated wadding has come on the market. Secondly, colors in both the plain and corrugated types. Both developments increase the adaptability of these products from a decorative standpoint to modern requirements in packaging as well as in package display, and are bidding for increasing importance.

Fibre Tubes

From a packaging standpoint, tubes, which are usually spirally wound but may be convolutely wound, are of interest, largely for mailing posters, calendars and similar material. For this they are ideal. Kraft paper ends which tuck in and prevent the contents slipping out are put on when required. Two, three and four ply tubes are most commonly used. To fill unusual requirements in the mailing field and in that field where fibre tubes function as component parts of a package, they are made of any number of plies up to fifteen. Diameters range from less than one-half inch to twenty inches. Papers and boards of all kinds, ranging in thickness from 0.003 to 0.040 may be used. Special characteristics are developed by the selection of the adhesive, such as animal glue, vegetable glue, asphaltum, etc., and by dipping or spraying.

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Transparent Wrapping Materials

By HAROLD A. LEVEY

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ONE OF SCIENCE'S outstanding contributions to the art of wrapping is the completely transparent cellulose sheeting available to the present market. While all of us can recall seeing thin gelatin sheeting about, and on packages as far back as we can remember, it was only until a year or so before the World War that we saw a completely transparent form of cellulose sheeting. The nature of the demand for the transparent wrapping fairly parallels that of the glass container in accordance with such paraphrases as "See what you are buying." However, it offers decorative possibilities not within the scope of the glass container. Its adaptability, due to its extremely flexible nature, makes this possible. Its capacity to be colored, embossed, printed upon and satisfactorily bonded together, substantially augments its other properties.

Gelatin sheeting has been almost completely replaced by the later types of transparent sheeting. It is manufactured by a limited number of concerns in this country [1,2] and to a greater extent in Europe, more particularly Austria. One of its uses today is as a covering for the windows of cartons, both in water-white and in colored sheeting. As it does not possess any substantial advantages over viscose sheeting, this latter type has rapidly displaced its use for general purposes. Gelatin sheeting is not water-proof nor moisture-proof, but is hygroscopic, and grease- and oil-proof. Its price is higher than that of its nearest equivalent, standard viscose sheeting. It is readily attacked by insects and mold and is unsuited to come into direct contact with types of foods containing substantial amounts of moisture.

The first type of transparent cellulose sheeting which met with ready acceptance as a general wrapping was composed of viscose or regenerated cellulose.[3,4] This material is completely transparent and colorless, is slightly hygroscopic, neither water- nor moisture-proof, non-inflammable (but burns), grease- and oil-proof, and is the lowest priced completely transparent sheeting obtainable on today's market. It is affected to a degree by differences in atmospheric conditions, more particularly humidity changes. It can be obtained in colors and in embossed designs. The non-moistureproof is not used as a food wrapping in direct contact with food products possessing a high moisture content. Its most extensive application is that of an outer wrapping for nearly every type of commodity of such size as can be readily enclosed within its standard size of sheet dimensions, and the price and profit margin of the commodity permitting its use. Its relatively low price, together with its ease of sealing and workability in automatic equipment, has extended its use to almost limitless fields.

A relatively new type of sheeting which has recently found its place on the American market as a general wrapping is that which is composed of cellulose acetate.[5,6,7] This material is inherently water-proof, and oil- and grease-proof. It possesses an unusually high degree of clarity, brilliancy and surface sheen. It is practically unaffected by atmospheric conditions and humidity changes. It is not attacked by insects nor mold, can be obtained in colors, is readily printed upon and embossed, as well as quickly cemented. Its properties can be so varied that the same material can be made into sheeting which has striking rigidity, or can be prepared so that it possesses the flexibility of rubber sheeting. Its moisture transmission values can be controlled within definite limits, so that it may be readily applied to almost any type of wrapping, including direct contact with the food products which it encloses. As it is not affected by humidity changes, it is effectively used as a covering for the windows of envelopes and window cartons.

To overcome some of the shortcomings of the first two types of transparent sheeting mentioned, viz., gelatin and viscose, there have been placed upon the American market these two types of sheeting, coated with a very thin protective film, which renders them water- and moisture-proof in varying degrees. Gelatin sheeting is now coated with a thin film of cellulose nitrate, which is said to result in a practically water-, oil- and grease-proof film of relatively low inflammability, good strength, and suitable as a wrapping in direct contact with food products.[8] This coated sheet has substantially reduced sensitiveness to humidity changes, and resists the attack of insects and the growth of mold. It can be readily cemented, printed upon and embossed. Its cost is about one-third higher than that of the untreated sheet.

More or less paralleling the above type of sheeting is that which results from viscose sheeting which is rendered moisture-proof by means of a very thin composition coating, on each of its faces.[9,10] It is quite highly resistant to the transmission of moisture. Because of the moisture resistance offered by this coating, this type of sheet-

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ing is invariably used where the wrapping must come into direct contact with the food products, and especially when it is desired that the original moisture content in that food or similar commodity be retained for a fairly long time. This applies particularly to such material as confections, baked foods and tobacco products, whose moisture content must not be lost; while crackers and related materials must not take up moisture. Even though this material costs over one-third more than the uncoated sheet, the volume used of this coated sheeting is about three times that of the uncoated sheet. Obviously, its resistance to moisture, as well as its ability to maintain the moisture content of wrapped materials in almost the same state as when they left the manufacturer, appears to more than offset its increased cost.

All of the above types of sheeting are practically odorless and tasteless, and can be formed into an almost gastight enclosure, one of these[9] possessing sufficient thermoplastic properties to make a satisfactory "heat seal" to bond sheet to sheet by the application of a moderate amount of heat and pressure. This property enables these types of sheetings to form a package which will retain nearly all of the original odor and flavor of the contained materials.

Papers, by which we mean a felted mass of cellulosic fibres, have not yet been prepared in any modified or treated form which has resulted in a sheet that could be considered completely transparent. By this term we mean a transparency comparable with that of water, or of glass, or that when held up to the light would not diffuse the light source. As a result these types of papers appear in varying degrees of translucency. Properties and uses of the various types of wet and dry waxed paper, glassines, waxed glassines, vegetable parchments and the like are of course already well known to the packaging industry. There are now appearing, however, types of resin-treated papers [8,11] which have an unusually high degree of translucency approaching transparency. They have good moisture transmission resistance, and are practically oil- and grease-proof for the limited period of time for which they are used as a food wrapping. Like all treated papers, as well as all the other sheeting mentioned in this article, these last-named products are air-tight and dust-tight. They are immune from insects and mold growths. Their inflammability is slightly greater than that of the untreated paper. The cost of this form is intermediate between that of a good grade of waxed glassine and regular viscose sheeting.

[1]Marsene Transparent Paper Co., Gary, Ind.
[2]Brigham Sheet Gelatin Co., Randolph, Vt.
[3]Cellophane; Du Pont Cellophane Co., New York City.
[4]Sylphrap; Sylvania Industrial Corp., New York City.
[5]Inceloid; American Products Mfg. Co., New Orleans, La.
[6]Protectoid; Celluloid Corp., Newark, N. J.
[7]Kodapak; Eastman Kodak Co., Rorchester, N. Y.
[8]S. W. Weis, Canal Bank Bldg., New Orleans, La.
[9]Moisture-proof Cellophane; Du Point Cellophane Co., New York City.
[10]Moisture-proof Sylphrap; Sylvania Industrial Corp., New York City.
[11]Transpara; Transpara Paper Co., Rhinelander, Wis.

Modern trends have been decidedly in the direction of the completely transparent wrapping, and of these there is a preponderance of favor toward the so-called moisture-proofed types, notwithstanding their substantial increase in cost. These situations indicate clearly that the desiderata is to make the wrapped object completely visible as well as to reach the consumer in practically the same condition as when it left the manufacturer. Such conditions demand a form of sheeting, which shall itself be invisible and at the same time possess a high order of protective value. It must include such properties as water-, oil- and grease-proofness, and dust- and air-proofness, a high resistance to moisture transmission, good tensile strength and flexure value, together with a retention of these properties over a substantial period of time. It must be available in colors, capable of being readily printed upon and embossed, easily and quickly cemented, as well as being readily adapted for machine operation.

While the moisture-proof viscose sheetings have, in general, most of these desirable properties, they have, however, many shortcomings. They are a laminated composite sheet, the surface coating which renders them moisture-proof having a thickness of only one ten-thousandth of an inch. While moisture transmission resistant, these sheetings are not completely water-proof. On immersion, or sufficiently long contact with water, the thin protective coating can be detached.

Probably the ultimate line of development will consist of a homogeneous sheet made from a base of cellulose acetate, or some similar derivative of cellulose, properly modified or treated to render it moisture transmission resistant. Cellulose acetate and related derivatives are inherently water-proof, and when their moisture transmission is improved (as the resulting sheet is homogeneous throughout), and not subject to humidity changes, there will be no formation of crinkles, etc. This formation is particularly noticeable when both the coated and uncoated viscose sheetings are used as window coverings for cartons and the like. The cellulose derivative type of sheeting in addition to possessing a high degree of transparency, even to ultra-violet light, is very slow burning. Stability and longevity, freedom from discoloration, and resistance to the disintegrating effects of the elements are properties of substantial worth possessed by the cellulose derivative types of sheeting. The cost must be low,

in order that it may be used to wrap even the lowest priced articles. However, this usually results when a large market prevails. Transparent sheeting has become the most accepted type.

It is always associated with quality products and low-priced commodities invariably give publicity to the fact that they are enclosed in a transparent wrapper, thus using this feature as a selling point.

Printing and Embossing Transparent Sheeting

Owing to the nature of the surface of transparent sheeting, printing on it initially offered many problems. The first difficulty was to obtain the proper behavior of the inks on the surface, both initially and finally. This difficulty was especially troublesome in the case of the coated sheeting, and with cellulose acetate. The non-porous nature of the surface introduced difficulties in connection with the drying of the inks. The smoothness of the surface of this sheeting caused additional trouble in the handling of the sheeting by the press. However, most of these conditions have been overcome and this sheeting is now being printed upon, in sheets and rolls, on one or both sides in many colors with nearly perfect register.

Relief effects are now obtained by embossing and printing which in many cases have eliminated at least one wrapping and results in a package of more attractive design and greater utility. Owing to the complete transparency of this sheeting, only the printing is visible and appears to be a part of the object wrapped.

Gummed transparent sheeting is now available, both clear and in colors. It can also be supplied printed upon and embossed. Printed and cut-to-shape seals and closures are now fabricated which effectively serve the purpose of sealing and labeling or marking such packages. It also designates the stragetic point at which the wrapping might be most readily opened. The clear and colored transparent gummed tape is used in many manually wrapped packages as a time saver and resulting in a more striking wrapping. The clear transparent gummed tape is by far the best product for making an invisible repair on torn paper or fabric.

As transparent sheeting possesses unusual strength for its thickness, the sealing of packages so wrapped and sealed can be opened only with difficulty. To overcome this situation some manufacturers leave a part of one flap turned up at the closure. Others enclose a small strip or narrow ribbon of a thicker variety of the sheeting in another color, which projects out at the joint in the wrapping. By pulling on this strip the end of the wrapping is as readily removed as the opening of an envelope or package by the pulling of an enclosed thread.

Linings for Boxes

Lining assumes as important a role in the makeup of certain packages as the outside covering. A large percentage of boxes are lined with white or tinted papers as well as with gold and silver papers. Suede paper which is lined onto board or else wrapped over the form so that the score lines will not show are also used. Rayon is likewise used on some of the cheaper forms.

A most practical material for box linings is velveteen, frequently miscalled velvet. The difference between the two is a technical one and the average layman does not know the difference between velveteen and velvet. Velveteen is more practical than velvet for the following reasons: its appearance is that of velvet; it is lower priced than velvet; its construction is such that when applied as a lining, pastes and glues will not come through; certain velveteens are prepared anti-tarnish for this purpose, which means that silver and other metals are not discolored.

Velveteen fills a particular lining need in good packaging, especially where a soft cushiony effect is desired, as nothing can quite give the effect of richness as a luxurious velveteen. Many box, case and tray manufacturers have been using velveteens for linings for many years, notably all the nationally known silverware manufacturers, pen and pencil set manufacturers, for perfume boxes, cutlery articles, razor cases, spectacle cases, draughtsmen's materials, toilet articles. Jewelry boxes are frequently made with velveteen used both as an outside covering and as lining material.

Velveteen comes in widths of 18 in., 22 in., 24 in., 29 in., and 36 in., making for a minimum of waste in cutting, and in a color range of 102 shades. When necessary any other shades can be dyed to match other materials. Velveteen is particularly adaptable to packaging as it is easily handled and may either be tightly stretched or shirred.

Perfumes and compacts are generally shown to best advantage in the various champagne shades, whereas shades of old rose, Copen blue and gooseberry are used for manicure sets. Silverware manufacturers incline to the more regal shades of royal blue, though there are the usual variations to meet the individual creations. Silverware trays prepared for the packaging of silverware in individual packages are also being lined with velveteen in shades of burnt orange, special shades of green, Copen blue and grey. For the lining of boxes which hold pearls, greens and turquoise blues are used. For the general run of cheap jewelry display, the predominating colors have been military blue, emerald green and mignon purple. For pen and pencil sets such colors as burnt orange, special Nile greens, as well as crystal grey, are used.

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Glazed and Fancy Papers

By LEONARD I. HOUGHTON

Secretary, Glazed and Fancy Paper Association

THE FOLLOWING DEFINITIONS apply to the various types and kinds of glazed and fancy papers and to various terms used in connection with their sale and use.

Bodystock: The kind of paper, such as rag, sulphite, kraft and ground wood, which is coated, embossed, etc.

Brush Finished: Papers which after calendering are further polished in a machine which thoroughly brushes the surface.

Cloth-lined: Paper and cloth pasted and pressed together into a single sheet of material. Used for paper collars, envelopes, tags, children's books, etc.

Coated, Fancy: Papers with fancy effects produced upon the coating machine instead of by printing or embossing. This is done by many means, such as spraying, spattering, mottling, felt blocks, moving brushes, etc. There may be one or several colors used and the finished paper may have a regular design or it may consist of a fancy effect without a design which repeats itself.

Embossed, Heat: Papers to whose coated surface has been applied a heated roller with a design, the raised portions of which, coming in contact with the coated surface, cause a change in the shade of color.

Embossed, Friction: Papers which have a pattern pressed into them. The raised portion usually appears on the front surface.

Embossed, Print: An embossed paper which has ink in the embossing pattern.

Embossing Designs—Common: There are around 100 embossing designs commonly used, such as basket, skytogen, etc.

Embossing Designs—Exclusive: There are several hundred different embossing designs, in addition to the common ones, which have been originated or purchased by individual manufacturers who thereby own these designs exclusively. Such designs are frequently protected by registration at the United States Patent Office. Most manufacturers do not desire to copy others' designs, preferring to have exclusive designs of their own. The Glazed and Fancy Paper Association, 146 Chestnut Street, Springfield, Mass., maintains a registration bureau of these designs for the protection of its members and to answer inquiries from customers and users. They are glad to tell users where a particular design may be obtained.

Fabric Designs: Printed designs, in imitation of various fabrics, commonly known as "fabric prints." Embossing design in imitation of fabrics such as rep, linen, etc.

Flint: A coated paper, white or colored, finished by rubbing with flint stones, thereby producing a very shiny surface.

Flock: Papers coated with flock which is finely powdered wool, cotton or silk are called velour or suede and are differentiated by prefixing the name of the kind of flock used, such as cotton velour, silk velour or wool velour.

Friction Glazed: Coated papers that are finished in a friction calender which produces a highly polished surface as a result of the rotary action of a steel roller.

Gold Papers: Coated with metallic substances which look like gold.

Holly: Papers with a printed or embossed holly design.

Intaglio Printed: Papers printed with the intaglio printing roller which has the pattern cut into the roller and transfers the ink from these depressed places to form the printed pattern on the paper. The amount of ink transferred is controlled by the depth of the cut-in portion on the roller; in this way some parts of the pattern have more or less ink and thereby produce the printed pattern in varying shades of the same color. This cannot be done with a surface printing or wall paper machine. According to Webster this word is pronounced in-tal'-yo, the "tal" as in "tallow."

Leather Grain: Papers with leather grain designs which are either produced by printing or embossing. Common examples are alligator, Persian lamb, etc.

Marble Agate: Papers with a design imitating polished colored marble. The design is sometimes a printed design but true marble agate papers are made by floating coloring materials on a viscous bath. Usually a small quantity of an extract made from ox liver is mixed with the colors in order to facilitate their distribution. The design is then created by combining the colors on the surface of this bath with a wooden comb or the fingers. After the pattern has been made on this bath the floating materials are transferred by contact to the paper. This is an old manufacturing process in Germany where it is done by manual labor; in this country it is done by a patented machine.

Metallics: Papers coated or covered with such metals and in such a manner as to give the luster of metals. Bronze powder and aluminum powder are used chiefly for metallic papers made by the coating process; pyroxylin mixtures are also used to make metallic coated papers. *Half Fine Metallic* papers are produced by laying patches about five inches

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square of a thin copper or aluminum alloy on paper which has been coated with an adhesive. The patches are allowed to overlap so as to form a continuous metallic surface and the overlapping edges are brushed to remove any surplus. *Foil* papers are produced by the application to paper of a continuous sheet of metallic foil, usually tin foil, zinc or their alloys. The foil is adhered to the paper by the use of some adhesive. These are the real foil papers; imitation foil papers are made by coating processes as defined under the term tin foil.

Mica: Papers whose coating material includes small particles of mica which give a sparkling appearance.

Moiré: The name of a large class of embossing patterns which, after the manner of textiles of the same name, give a mottled or watered appearance.

Multi-Color: Papers coated, or originally made, with many colors mottled or blended into a fancy effect.

Non-fading: Papers that resist fading when exposed to sunlight. Some colors fade more than others.

Pastel: Subdued color shades.

Pearl: The well-known and very beautiful mother-of-pearl paper. The paper is coated by a special process with certain salts and then so treated that a crystallization process occurs which develops the mother-of-pearl design. This is a French manufacturer's product. American companies produce the same results with pyroxylin.

Plate: Coated papers finished in a stack calender which produces a dull finish by means of pressure.

Printing Designs: Some designs are common designs, that is, common to the industry and obtainable from many different manufacturers. Other designs have been created or purchased by one manufacturer only, and frequently registered by them in the United States Patent Office. These are called exclusive designs. The office of the Glazed and Fancy Paper Association maintains a file of members' samples for use in answering inquiries as to the source of any desired printed design.

Pyroxylin Coated: Papers coated with pyroxyun solution.

Ream: 500 sheets is commonly used instead of the 480 which we learned in school. The standard size is 20 in. x 26 in. because these papers are most frequently sold in 26 in. rolls.

Rolls: A roll usually contains from three to four reams of the lighter weight papers, 17 lbs. to 25 lbs., heavier papers having fewer reams per roll.

Sateen: Another name for mica papers.

Skytogen: A large class of embossing designs consisting of many small raised portions in no particular pattern. They are supposed to represent the background formed by a cloudless sky. The name is pronounced in various ways, but the preference seems to be with the accent on the first syllable: sky-toe-jen.

Silver: Papers coated with metallic substances which look like silver, sometimes called aluminum argentine or platinum papers.

Suede: Another name for velour or flock paper.

Surface Printed: A fancy paper on which a pattern in colors has been printed by direct transfer of ink from raised portions of printing rollers.

Swirl: Designs, both printed and embossed, which consist largely of circular lines.

Tarnishing: Discoloration of metallic papers caused by chemical action from contact or vapors. The same action that occurs to gold and silver in their common uses.

Tinfoil: A paper coated on one or both sides to imitate tinfoil.

Tissues, Fancy: Tissue paper upon which has been printed a fancy design. Frequently, it is embossed with another design. Largely used for envelope linings.

Trade Mark Designs: Trade marks printed or embossed on the paper.

Velours: Another name for flock papers. Sometimes the term "velour" is applied to imitation leather papers.

Water-proof: Papers whose coating material includes such ingredients that the surface becomes to a large extent non-absorbent of water.

Weight: The weight per ream on a basis of 500 sheets, 20 in. x 24 in., of the bodystock.

Wood Grain: Printed papers with designs imitating various wood grains.

Considerable delay is caused by customers sending in an order for a certain number of reams of a certain color. Such an order does not state what size ream they desire, what kind of paper is wanted for a bodystock or what kind of finish is needed. Orders for paper should state the quantity; whether in rolls or sheets; size of rolls or sheets; manufacturer's sample number if possible; otherwise full details regarding the color, finish, and bodystock. There are many shades of most colors, hence, to say that a red is desired is not specific enough. A sample of the paper desired covers the need if the sample is large enough; this sample should be 8½ in. x 11 in. if possible; a sample ½ in. x 3 in. is so small that the weight of the bodystock cannot be determined.

Trade Customs of Glazed and Fancy Paper Association

Standard Width of Paper in Rolls: Ordinary glazed, plated and printed papers, 26 in.; extra fine glazed, waterproof and embossed, 26 in.; fancy, 26 in.

Contents of Rolls: The number of sheets 20 in. long by width of roll. Glazed, plated, printed or any flat-surfaced papers weighing not over 30 lbs. to a

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ream 20 in. x 26 in. to contain not less than 1,500 sheets. Paper weighing over 30 lbs. to a ream 20 in. x 26 in., not less than 1,000 sheets. Paper with embossed or fancy surface, not less than 1,000 sheets.

Winding: Coated side out for all papers unless otherwise specified.

Standard Sheets: A standard sheet in any grade shall be 20 in. in length by the width of a standard roll (26 in.).

Standard Colors and Shades: The forty colors (also white and India) adopted by the Association and accepted by the War Industries Board, Nov. 15, 1918.

Special Colors: The prices for special colors shall be based on a quantity of 25,000 sheets (50 reams) of a standard size. Smaller quantities may be made at an advanced price based on the increased cost of production.

Variations: On all special runs the normal variations in quality, weight and shade shall be accepted.

Overruns and Underruns: All special orders shall be subject to overruns and underruns as follows: Orders under 25,000 sheets (50 reams), standard size, 20 per cent; orders 25,000 sheets (50 reams) or over, standard size, 15 per cent.

Prices: All prices, unless otherwise specified, are for paper in rolls. The basic pricing unit is reams of 500 sheets, 20 in. x 26 in. Billing is in reams (500) 20 in. by the width of the roll; if in sheets, actual size. The price conversion is to be shown on the bill when the paper is other than 20 in. x 26 in. Prices and quotations are subject to change without notice. All orders, contracts and agreements are contingent upon strikes, fires, accidents or causes beyond control. The sample book standard size is 5 in. x 8 inches.

Quantities: Schedule of quantities for price differences: 1 ream—6 rolls; 1 roll (2, 3 or 4 reams)—12 rolls; 3 rolls—24 rolls.

Extra Charges: Extra charges are made for sheeting, slitting or rewinding based, unless otherwise specified, on a ream of 500 sheets, 20 in. x 26 in. For sheeting standard rolls (26 in.) to lengths greater than 20 in. or for sheeting rolls wider than standard the charge is to be proportional to the basic rate. For sheeting rolls narrower than standard or lengths less than standard the charge is to be the same as for standard size. A charge in excess of the basic rate is to be made for sheeting, slitting or rewinding less than a standard roll.

Terms and Delivery: All prices are f.o.b. point of shipment. All "make and hold orders" are to be accepted only on condition that a specified date for the entire delivery be given, at which date the goods are to be charged and the invoice accepted for payment whether goods are ordered shipped or not. A discount of 2 per cent may be allowed only for cash in 30 days from date of invoice, except that where several invoices fall in one month, discount may be allowed if settlement be made 30 days from the average date of those invoices.

Claims: All claims must be made within ten days from receipt of goods. No claims will be allowed on goods cut, printed, soiled or damaged by the purchaser. This paragraph shall not apply to claims based on apparent manufacturing defects.

Clothlined Paper: Prices on clothlined papers are based upon 1,000-sheet quantities of standard sizes. Additional charges are made for small quantities and for cutting to small sizes. Terms of sale are f.o.b. shipping point. A discount of 2 per cent is allowed for cash within ten days from date of invoice, net thirty days.

Metal Foil in Packaging

METAL FOIL brings to the packager two functions which it performs with exceptional efficiency: (a) protects the product; (b) decorates the package. The value of foil as a protective wrapping arises from the fact that it is metal—nonporous, moisture-proof, grease-proof, odor-free, light-proof, and weevil-proof. Foil is pliable and flexible. It stays put. It can be used on packages having an odd or irregular shape.

A long list of perishable and semi-perishable articles have found foil indispensable for protecting and preserving their original quality and freshness. From butter, candy, cheese, chewing gum, chocolate, and cigarettes to meat loaf, sausage, soap, tobacco, and yeast, foil delivers to the consumer the original flavor freshness, and purity. A foil package marks the perfectly-protected product—a fact established by long years of consumer acceptance and confidence.

The value of foil for decorating the package and strengthening its ability to catch the eye and win favorable acceptance hardly needs demonstration. Foil has a gleaming silvery lustre that catches and fixes attention. Tests have proved that more people notice a foil-wrapped article than less-strikingly-wrapped packages. Anything bright and shiny tends to draw the eye—a fact which can be used to advantage in designing packages which have to compete for attention on crowded shelves and counters.

Foil is made from: (a) Pure tin; (b) aluminum; (c) composition of tin and lead. For cer-

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tain products one type of foil is more satisfactory than another. Foil manufacturers aided by wide experience are glad to consult with prospective users of foil with a view to recommending that grade which is best suited for the purpose in view.

Great strides have been made in the development of various forms of foil to supplement its inherent qualities by combining the protective metal sheet with other materials. For instance, foil is combined with waxed papers, parchment, glassine, bond papers, manila papers, etc., thereby reinforcing them and thus widening their range of usefulness. For example, parchment-backed foil is used for lining tea cartons and as a wrapping for butter and cheese. Meat loaf is packaged in foil backed with waxed paper, and numerous other products have had a special form of foil devised for them. Metal foil can be subjected to certain processes such as embossing the surface with rich-looking designs or with the trade-mark repeating itself. Deep, lustrous colors are applied by lacquer-coating the foil-surface. Foil, of course, can be handsomely printed in colors.

Among the new developments in foil is the combination of foil with paper to form a stock suitable for labels and box-wraps. The foil is bonded so firmly to the paper as to be almost inseparable. It can be plain, embossed, or lacquered, and of course can be printed in any manner desired. Another development is a foil-lining for paper cans and canisters. The foil is paper-backed so that it can be adhered to the inside of the paper can, thus forming a combination metal-paper container which can be used for many oily and greasy products for which a paper can heretofore was out of the question.

Along somewhat similar lines has been the development of foil-lined and and foil-surfaced cartons. The foil is bonded to paper-board which is then fashioned into folding cartons of marked beauty and sales-appeal. Sometimes the foil surface is inside the carton to provide special protection for cereals, gelatines, powders, etc.

Foil is manufactured in sheets or continuous rolls for automatic packaging equipment. Most foil manufacturers are equipped to supply the foil in embossed and printed form. As part of their service they maintain package design departments which are capable of carrying a packaging problem through from the idea to the completed job.

The following table lists the more common uses of foil and the grades used:

Commodity	Backing	Adhesive
Box covers	Soft paper	Asphalt
Chocolate bars	No backing	.....
Chewing gum	Waxed paper	Wax
Candy bars	Waxed paper	Wax
Candy mints	Plain foil—no backing	.....
Cartons	Paper board	Asphalt
Tea	With and without paper	.....
Cakes	Waxed paper	Wax
Cheese	Plain or transparent paper backed	If paper backed—wax or cement
Yeast	Plain—no backing	.....
Ice cream bars	Waxed paper	Wax
Cut tobacco	Waxed paper	Wax
Cigarettes	Bond paper	Glue lined
Box covers	Bond paper	Asphalt or colorless adhesive
Box liners	Plain or paper backed	If paper backed—glue lined
Soap	Waxed paper	Wax
Photo films	Waxed paper	Wax
Corsage stems	No backing	.....
Bottle necks	Tissue paper, if any	Cement, if tissue paper backed
Bottle cap liners	Plain or paper backed	If paper backed—colorless cement
Window decoration	Plain or paper backed	If paper backed—asphalt or cement
Butter wrappers	Paper	Cement
Meat wrappers	Waxed paper	Wax
Gift wrappers	Bond paper	Asphalt
Typewriter ribbons	Wax paper	Wax
Bon bon cups	No backing	.....
Labels	Bond paper	Colorless cement
Vanity boxes	No backing	.....
Milk bottle caps	No backing	.....
Frozen food packages	Bond paper	Asphalt
Chocolate buds	No backing	.....
Insert for transparent wrapper	Wax paper	Wax
Liners or covering for paper cans and containers	Plain or paper backed	If paper backed—usually asphalt

Embossing for Packages

THE USE OF EMBOSSING on a box top or package serves a definite purpose. It adds a third dimensional quality to the design and focuses attention on a name or trade mark.

Most materials used for making plain or fancy packages can be embossed in all shades of bronzes, inks or even highly colored papers, metals and leaf. This includes such materials as leather, cloth, paper, cardboard, wood and transparent cellulose. In preparing an embossed package, catalog cover, brochure or the like, a die maker and a designer familiar with this sort of work should be consulted. The designer knows what sort of design is best suited for embossing or stamping, and a die maker who knows his business suggests the proper kind of a die.

Many people, both tradesmen and purchasers, confuse stamping with embossing when in reality the latter is the depressing of a die with heat through leaf or foil below the surface of the material upon which it is stamped. Dies are made with cutting edges so that papers, cardboard and even light weight leather can be cut out, stamped, and an embossed effect can be obtained with one impression on most any of the materials mentioned. These dies

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are called inlay dies with cutting edges and excellent results can be had with this process on counter cards, price cards, window displays, signs, as well as loose leaf covers, catalog covers or any medium or heavy weight stock.

Blank embossing is the first operation used in all superfinish work. The dies used for this work are usually cut with panelled surfaces and deep blunt outlines around the panels, these outlines being used to place masks or stencils preparatory for further operations which are either done by spraying or hand coloring. Hand tooled bags, book jackets, loose leaf covers, school and college year books, bill folds, jewel boxes, cigarette boxes and a dozen and one things are started with the first operation as blank embossing. Many fancy imported papers, leathers and other materials are embossed in this same way and sprayed to give many toned effects. Paper backed foils such as have been recently used to such a great extent lend themselves perfectly to this type of work.

Embossing as a process is still in its infancy, so far as it has been used in the more artistic lines. It is not a difficult process, yet it requires painstaking operators, proper equipment and an overseer to know the best results to be obtained from a die. The entire detail in the die must appear on the face of the material embossed, otherwise the result loses its crispness, often placing the blame to a faulty die when in reality the trouble is a poor force or, in shop lingo, a poor makeready. Heat, too, must be carefully considered. If embossing or stamping with foils it is essential to use the right degree of heat, which is determined by the kind of material to be stamped and the sizing of the foil or leaf.

The box maker should also be cautioned about embossed wrappings. Frequently in making boxes too much of the fine detail embossing is taken out. A careful box maker if cautioned, will see to it that the finished package has all the embossing crisp and sharp just as it was when received from the printer or lithographer.

Embossing by the roll leaf process requires but one operation. A roll of leaf or stamping foil is automatically fed across the face of a heated embossing die. One press operation transfers the foil to the paper and embosses the design at the same time. The resulting impression is clean cut, lustrous and distinctive. The colors available for roll leaf embossing are imitation gold and silver and a wide range of flat and metallic colors.

Roll leaf embossing can be done on Thomson-National presses of the Colt's Armory, Laureate, and Cutter and Crease types, and on the special heavy duty Chandler & Price press with automatic feeder. These presses can be equipped with a roll leaf feeding attachment and a heating plate on the equipment necessary to produce distinctive embossed boxes.

The development of roll leaf embossing is one of the most important steps in the decoration of packages. Formerly, it was necessary to use flat leaf in individual packs, leaf which had to be cut to the exact size required for each job. This required further operations such as laying on the individual sheet, brushing off and cleaning of the surplus leaf which stuck to the article which was being stamped. Using such methods, a stamper with two helpers could get out about two thousand impressions in a day. But with roll leaf embossing the same stamper without any assistance can produce five to eight thousand impressions per day and at the same time eliminate all laying on and brushing off.

Some of the leading manufacturers of roll leaf and roll leaf feeding attachments maintain service departments which cooperate closely with manufacturers and box makers.

Raised Printing for Packages

Virkotyping or the process of producing raised printing began as an industry in 1912. The process at its inception was extremely crude and its many shortcomings almost offset its advantages, preventing general acceptance. Principal of the defects was the fact that the completed product was non-permanent, that is, it would not stand a fold and could be removed by slight rubbing.

Constant research developed materials that gave the desired flexibility and permanency but unfortunately these were such that considerable difficulty was experienced in using them for heavy production. These difficulties were occasioned by the necessity of employing a water base ink to secure the desired results, and the sensitivity of such ink to climatic conditions is too well known to require comment.

Three years ago Wood, Nathan & Virkus Company, Inc., brought out their "X" base line of inks that made the process of producing permanent and flexible raised effects a simple printing process. Ordinary line cuts and type are employed on any high speed press and by an extension delivery the sheets are fed into the process machine which automatically completes the process at speeds up to 3400 per hour.

The development of this ink has opened up the packaging field to the process and for the past two years it has been used in packaging a rapidly increasing number of nationally known products.

Its chief advantage is that in one entirely automatic operation—an operation as simple as flat bronzing—it produces brilliant, clean, raised effects in gold—silver—or a combination of colors.

Process machines are less expensive than good-bronzers, while inks and compounds used in Virkotyping are so reasonably priced as to make the process especially attractive to those seeking true distinction in their packaging at moderate cost.

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Folding Cartons

By WILLIAM A. SMITH
Rochester Folding Box Co.

TWELVE IMPORTANT THINGS to consider carefully in the preparation and the manufacture of a carton are: size and form; attention value; composition; illustrations; color; engravings; reproductions; plate printing; lithography; stock; standardization and circulation.

Size and Form. Including the top and bottom, any ordinary carton has six sides for advertising messages. The form or shape should be planned and constructed for the convenience of display and handling. With the same number of cubic inches many different forms or shapes may be obtained—depending upon the product to be packed—being at all times a suitable container for the products as well.

Attention Value. A carton should attract attention. The color scheme and design when properly made should be pleasing and distinctive and the name of the product should be easily read at a reasonable distance. If an illustration is used with other type matter, caution should be exercised in preventing a crowdedness that detracts and is not pleasing to the eye.

Composition. The general balance of design is important. Top or bottom heaviness is dangerous. The eye's most natural follow-through is from upper left down to right. There is no general rule for using the same style of type throughout the design of a carton. The name of a product may be in a block letter and the descriptive matter carried out in another style. Upper and lower case has been found easiest to read. Simplicity is most essential in a good-looking carton. Blank space, copy and proportion are important. The tendency to crowd in too much copy on a carton is a fallacy. Successful manufacturers do not utilize all of the six spaces—in fact, the tendency is toward little copy.

The name of the product, an illustration, some words concerning the nature of the product, and the name and address of the manufacturer occupy the front. The back is often a duplicate of the front. A few remarks about the preparations or use of the product may be made on the sides while the top may carry the name of the product. If a long list of directions or recipes is found necessary it may be printed on the back of the carton, providing the list is not too long. The most successful way, however, to get your message to the consumer is through an insert placed within the carton.

Illustration. Illustrations are not merely used to fill space. They play just as important a part in the carton as does the name or the color scheme. There is more reason why an illustration for a carton should be more accurately made than for an ad appearing in a publication—it is a permanent trade mark for the product. When planning a carton for a product the best artist should be called in for consultation. Technique for carrying power should be considered before a selection is made. Mistakes are too often made by the execution of a very effective illustration but this effect is lost at a short distance from the eye. It is a mistaken idea that it is necessary to use four or more colors to get an effective illustration. Many striking effects are produced in few colors.

Color. Surely among the many thousands of color shades one can readily find a pleasing and distinctive color combination. We of course receive all our basic color combinations from the primary color scale. To place together just the right color combinations is no simple task and it should be left to one who understands harmonies in order to receive a successful result. Bright colors are always favored because of their carrying power. Clean and brilliant colors play an important part in making a carton attractive. They have a tendency to give one the impression of freshness and quality, whereas the dirty and dull colors give the impression that the goods are old and shopworn.

To bring life to dull colors they should be varnished. Price-mindedness has been the cause of many poor-looking cartons. The printer, lithographer or boxmaker give you just what you pay for. They have their standard color combinations and when it is a cheap carton they place this on their standard color combination together with others of a similar nature and as a result your carton has the same look as a hundred others.

It is true that a special color combination costs more money but that is only true when a small quantity is wanted. It is a far better policy to pay a little more money in the beginning for an attractive and distinctive carton, than it is to pay little money for a carton with the idea that it is only a container for the product.

Engravings. There are two distinct processes of engraving commonly used in the manufacture of cartons. One is used by the letter press printer and the other by the lithographer. Original engravings when made for the plate printer should be deeply etched and mounted on heavy metal instead of wood to assure sharpness in the making of electros from which to print the edition. That is to say the engraver should use a heavy metal of zinc or copper in making the plates. The original engravings should never be used for printing purposes. Many expen-

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sive engravings have been ruined to save a few dollars.

On account of the chemical process of the lithographer it is difficult to have engraving plates made by any person other than the lithographer who is to print the cartons. Thus it becomes necessary to furnish the lithographer with the complete sketch together with possibly a set of working drawings. When making a proof by either the plate printer or the lithographer it should be made on the same stock as will be used on the completed edition.

Reproductions. Reproductions are made from sketches or original working drawings that are approximately one-third larger in size up to twice as large as the finished copy. If the drawing is properly made and reduced in proportion, little defects and errors will be reduced to a minimum. To receive the best results from your design it is best to consult your printer or lithographer before attempting to make working drawings or engravings.

Plate Printing. Many a carton job has been ruined by poor registration, not because it was the fault of the printer, but because the printing plates were not practically made. To correct a situation of this kind is to begin with the making of the original sketch. Before undertaking the execution of a design consideration must be given to the preparation of making the plates in a practical way so that printing therefrom on the presses can be done with as little trouble as possible. Fine thin outlines around a color or a fine line as a border too close to the score lines are impractical and dangerous. This also applies to the lithographer.

Lithography. Within the last few years the offset press has made it possible to reproduce some colorful subjects on cartons. Some of the most attractive cartons are made on these presses. This press prints on any kind of stock, rough or high coated, and excellent results are obtained. Sharpness of lines and accurate reproduction of pictorial subjects have been successful. When a dull or rough finish is wanted the offset press does an excellent job.

Stock. There are many classes of carton board. The most commonly used is the clay coated, either news or manila back, and patent coated also with news or manila back. The clay-coated stock has a superior printing surface and is used for high grade cartons. When a bright white surface with little printing or ink is desired the clay coated will be chosen. The patent coated is mostly used for the average carton. The manila-lined is a better bender at the score lines than the news-lined. The selection of a proper board and stock with the right thickness is important in making a good carton. Some products can readily use different surface board as well as different thicknesses, even though the carton is of the same dimension. A board of the proper thickness to protect the product should be chosen.

Standardization. Continuity of design and standardization of color scheme is being considered more and more by the manufacturer today. It establishes a trade mark color and can be easily recognized by the consumer as belonging to that particular manufacturer.

Circulation. Many manufacturers realize that they have a potential market for introducing a new product through one of their cartons.

The carton selected for any product should serve four purposes: first, it should provide a suitable container; second, it should protect; third, it should be of such form and shape for convenient display and handling; and fourth, it should help sell the product. Not one of these four factors can be overlooked when selecting a suitable folding carton for any merchandise. Ordering cartons of the wrong size often causes considerable waste. One means of overcoming this is to furnish the carton maker with a blueprint showing the size and shape required. A limited number of blank cartons can then be made up and tested on the filling and sealing machines to make sure they fit properly.

Fibre Pails and Drums

Fibre pails are used extensively by the manufacturers of candy, bakers' supplies and bulk drugs, sugar grinders, spice grinders, coffee roasters, salted nut roasters, etc.

The value of the fibre drum for the bulk shipment of food products, dyes, colors and chemicals has been demonstrated as far as the protection of the contents is concerned, and because fibre drums do not warp, shrink or dry out, the protection continues while products are in manufacturer's warehouse, in transit and also in the consumer's hands.

The use of fibre drums has also been developed for the shipment of lard, petrolatum, transmission greases, cup greases, oil silks and similar semi-solids that have an oil base. They have also been developed for tooth paste, adhesive paste, marshmallow whip and other products of a semi-solid or plastic nature which have a water base. Fibre drums are used for their cleanliness which is desirable for products and chemicals. They are also used for their convenience in handling and for the full open top which allows free access to the contents.

In addition to the protection which they give their contents and the convenience with which they are handled, fibre drums are being used more and more for the advertising value of their exterior. Being straight-sided and smooth, and having a naturally fine appearance, they lend themselves to attractive display labels and enable the shiper of products in bulk to apply the same merchandising principle to the bulk shipment that has been so successfully demonstrated to be profitable in the presenting of his retail packaging.

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Specifications—Cartons and Display Containers

By ARTHUR J. WEISS
Robert Gair Company

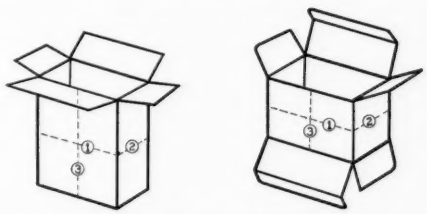
DUE TO THE lack of uniformity or standard method of specifying the dimensions of a folding carton, causing frequent misunderstandings and errors in the Industry, the Paperboard Industries Association adopted at a meeting, held on May 21, 1930, a simplified standard for stating the three dimensions of a folding carton.

Shown below are diagrams indicating, by number, the sequence in which specifications are to be presented, thus, in the case of either carton or counter display container, the following will apply:

1. The larger dimension at the opening.
2. The smaller dimension at the opening.
3. The third remaining dimension.

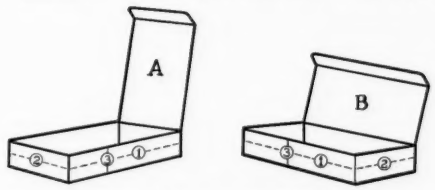
All measurements are understood to be from center of crease to center of crease.

SEAL END CARTON
REVERSE TUCK CARTON



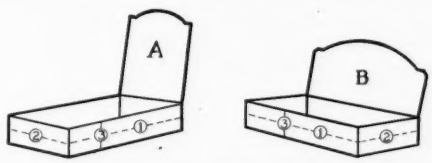
ONE PIECE BOXES WITH COVERS

State whether or not cover extends from first or second dimension. (That is, whether like A or B.)



DISPLAY CONTAINERS

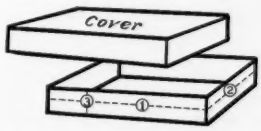
State whether or not display panel extends from first or second dimension. (That is, whether like A or B.)



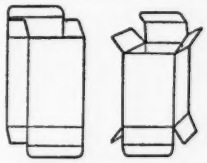
Adherence to this rule will greatly facilitate mutual understanding and tend to make a uniform system.

TWO PIECE TELESCOPE BOX

In two piece boxes dimensions of bottoms are given.

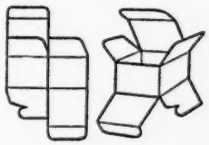


REVERSE TUCK CARTON



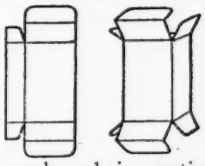
Popular style for low-priced candies, toilet and pharmaceutical articles, extracts and other products. Easily set up by hand, and may be packed automatically. Conveniently opened and closed for removal of contents, as used. Economical in manufacture because cartons interlock.

REVERSE TUCK CARTON WITH ARTHUR LOCKS



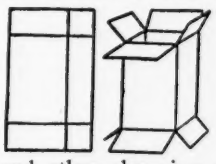
Same as reverse tuck, except bottom side flaps lock to prevent heavy contents from falling through bottom. Used principally for packing jars and bottles containing toilet preparations, medicines, condiments, and other heavy articles. Sometimes made with Arthur side locks both top and bottom, to hold flat round jars and similar objects securely.

STRAIGHT TUCK CARTON



Has no advantage over the reverse tuck carton except that it is required for operation on some automatic machinery. It is extensively used and is particularly adaptable to high speed automatic cartoning operations. Must be made with right and left glue seams to secure the economy of interlocking in manufacture.

SEAL END CARTON



The most popular style carton for packing flour, cereals, sugar, salt, teas, coffees, spices and many other food products, soap powders and other cleansing preparations. Difficult to seal by hand; but packed and sealed on automatic machinery, it reaches the consumer with the contents untouched by hands.

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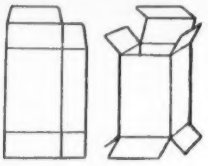
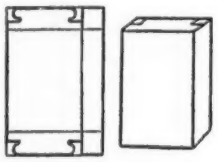
SEAL BOTTOM, TUCK TOP CARTON



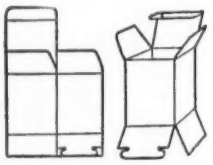
Handy as a pocket package for cough drops and small candies. Has the advantage of the solidly sealed bottom and the convenience of the easily opened and closed tuck top for the free use of the contents. Packed on automatic machinery. Not adapted to hand packing.

GREENLEAF CARTON

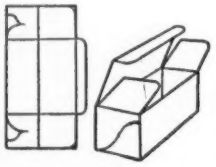


Locks at each end securely. Extensively used for packing dried fruits and other heavy or bulky food products; also as shelf containers holding individual packages in sales units.

TUCK TOP, GREENLEAF BOTTOM CARTON



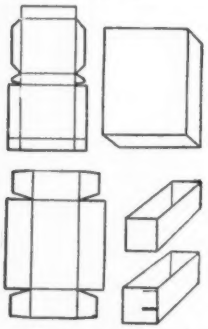
An adaptation of both styles, permitting the security of the greenleaf lock on the bottom and the convenience of the easily opened and closed tuck top. Used for the larger candy packages, heavy food products, shelf containers and many other purposes.



COLONIAL LOCK BLANK

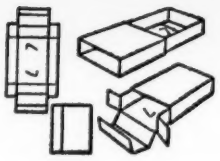
A folding blank, supported when set up by interlocking hooks and catches, requiring no gluing either by the box manufacturer or the user; very economical because of sheet layout. In universal use of biscuit and cracker manufacturers and is generally closed in a sealed, printed wrapper.

BRIGHTWOOD BLANKS



Brightwood machinery is installed in the user's plant for the sake of setting up and gluing two styles of blanks. The one-piece blank is folded and automatically glued along the vertical panels by a carton forming machine, which automatically fills and seals it. It is necessary for the user to have sufficient production to gain the economies made possible by the automatic equipment.

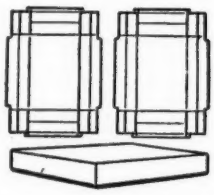
The two-piece style machine is fed blanks which are automatically glued into box and cover. The types are various—the cover may fit over the box to its full length, or only part way.



TUBE AND SLIDE BOX

Consists of a folding blank variously contrived, to be inserted in a tube. Its two-piece construction makes it substantial enough to be carried without damage in the pocket of the consumer. It permits the easy removal of one article without spoilage of those remaining. It is extensively used for cigars and cigarettes.

TWO-PIECE PROSPECT BLANK

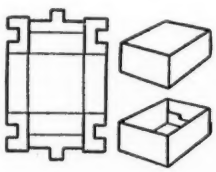


Two-piece box made up of blanks folded by hand. The ends overlap and are held against the side by friction. The cover may be made full or part depth and the blank glued at the side affords additional reinforcement, a recent development of the overlapping end blank in which an extra tab is provided as an extra protection at the corner. A similar reinforcement along the sides can be provided without the necessity of preliminary gluing. This style is the most recent development of the hand assembled telescope box.

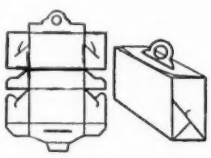
POURING SPOUTS APPLIED TO SEAL END CARTONS

There are a number of different devices applied to the top panel of an ordinary sealed carton to permit of easier access to the contents, but one of the most unusual is the one illustrated. The pouring spout is fashioned from the top flaps of the carton, and when properly operated by the housewife, is formed into a spout which may be opened and closed at will. Patented.

TWO-PIECE OVERLAPPING BOLT END BOX



This box is very secure. It is used extensively for packing hardware and other heavy matter where the added strength of the full telescope feature is desirable.



THE SATCHEL PACKAGE

A folding blank similar to the Colonial lock blank, which is held together by interlocking hooks and catches fitting together on the side panels. This box has the additional feature of a patented tongue and a handle which helps to secure the cover and economically substitutes for the tape formerly used.

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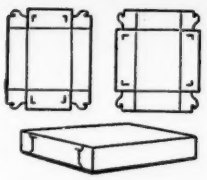
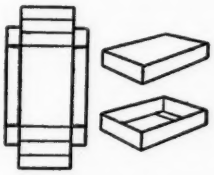
TWO-PIECE HOOK CATCH BLANK



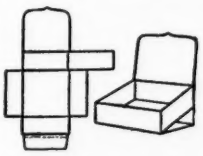
An economical style of telescope box, in which hook catches at the four corners hold the box and cover in place; very economical to manufacture, but difficult to set up. This style is not sufficiently durable to stand transportation or rough handling, but is a particularly suitable box for the clothing and florist industries.

TWO-PIECE FULL TELESCOPE OVERLAPPING ENDS CARTON



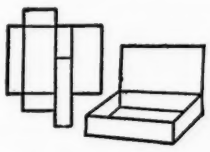
A good substitute for a solid box—is economical to manufacture, easily set up by hand, and makes a very neat, substantial package. It is used very frequently for candies, also for dry goods, clothing, etc.

TINSLEY COUNTER DISPLAY CONTAINER



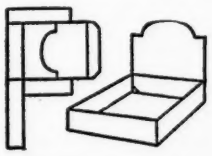
A box of patented design, so contrived that the cover, folding under, proves an easel support to display the goods. A remarkably successful type of display box because of its simplicity in construction, its ease in setting up, and because it has sufficient strength to act as a combination carrying and display box. It is susceptible to fine printing, required on one side only. The display panel is held at the proper angle by a supporting flap. Much of the universal success of this box is due to the fact that it is easily converted from a carrier to a display container by the retailer, in addition to offering an unobstructed view of the individual packages displayed.

CLIMAX COUNTER DISPLAY CONTAINER



Very simple to set up. Lies flat on the counter. A protective cover is necessary, making the box more expensive than the panel-fold which has no cover. Requires printing and coating one side only. Display panel is equipped with supporting flap.

PANEL-FOLD COUNTER DISPLAY CONTAINER

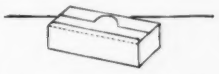


Simple in construction and setting up. Cover is so arranged as to make an attractive display panel. Protective cover is optional. Stands flat on the counter. Requires printing and coating one side only.

TRANSPARENT CELLULOSE WINDOWS APPLIED TO ORDINARY CARTONS

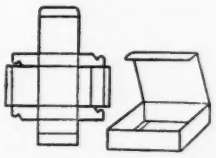
Manufacturers of candies, cakes and other products usually bought on sight are desirous of having their folding cartons made with a window to reveal the contents. Formerly, gelatine was used, but of recent years transparent cellulose has made rapid strides and is often used in its place.

BROAD-WAY OPENER BOX



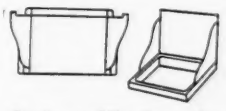
A new development in cartons that permits of inexpensive automatic filling through the ends of the cartons after which the ends are sealed and the box is opened the broad way, hence the name. This box may be also finished to form a counter display container without impairing the economical filling operation. Patented.

ONE-PIECE OVER-LAPPING END AND FRONT DISPLAY BOX



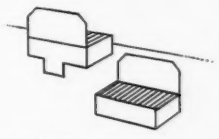
Economical to manufacture and extensively used for display purposes, this box has the added strength of the overlapping front which is not provided in the straight front box. The box can be made with panel-fold style display top, making possible the economy of printing on one side only.

FIVE PANEL COUNTER DISPLAY CONTAINER



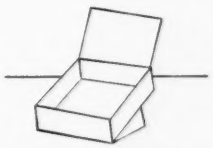
Old established style still in limited use. Requires printing two sides and coating two sides. Somewhat difficult to fill, since the packer must insert goods from side. Lies flat on the counter. Display panel is equipped with supporting flaps.

TILTING DUMMY DISPLAY



Excellent for perishable articles, like cheese and butter. Shows replicas of the individual packages, but does not hold any goods. Automatically set up by dealer as he places in the side tucks, an economical and attractive display.

ROSE DISPLAY CONTAINER



A very effective blank and one of the leading types of display containers. The cover section forms an easel, and is very readily transformed from a shipping box to a tilted display box by the storekeeper. It does, however, require printing on both sides of the board.

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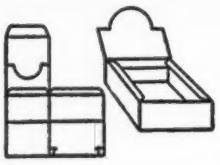
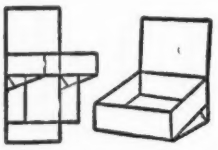
PANEL-FOLD CONTAINER WITH LOCK BOTTOM



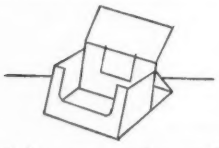
Similar in general appearance to the panel-fold, except that the locking device is on the bottom. This makes possible gluing of box on automatic machinery, with resultant speed and economy.

SIMPLEX COUNTER DISPLAY CONTAINER



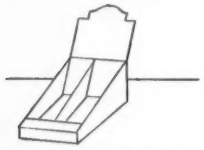
Simple to set up. Special easel feature permits tilting at different angles. Principal feature is simplicity with which dealer may display the goods at an angle. Protective cover is necessary. Requires printing and coating one side only. Display panel is equipped with supporting flap.

DARRAGH DISPLAY CONTAINER



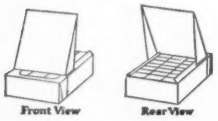
Another recent addition to the display container field, the main feature of which is that the contents when loaded for shipment are in an upright rectangular position, but when the box is set up for display, the contents are thrown to a stacked position and make a very attractive appearance on the counter. Also, the box is so constructed that the display panel is held in a certain position more or less rigidly and does not flop forward or backward as do so many containers.

GAIRWAY DISPLAY CONTAINER



An effective new type of display container in which the individual contents are packed in a staggered manner for better display. Particularly useful for fragile packages put out in glassine bags. Very easy for the dealer to sell, and the contents are kept in tidy position while on the display counters. Patented.

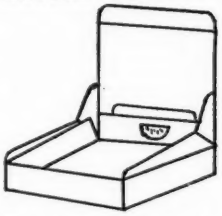
DISPLAY DISPENSER



A new departure in counter display containers. Instead of the conventional type of display container which shows goods on display with the display panel in the rear, this container has the display panel part way back. In front of the display panel appear several of the articles on display (see left illustration).

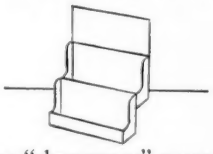
The bulk of the product is packed *behind* the display panel (see right illustration) making for convenience of the store clerk. The unsightly appearance of half-filled containers is avoided. This container always presents an orderly appearance until the last package is sold.

BROOKS' DISPLAY CONTAINER



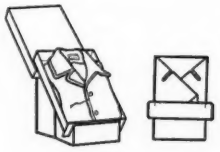
A counter display box complete in itself; that is, no protective cover is necessary. The box is equipped with a tab at the rear of the goods which the dealer elevates and secures in the rear panel. This throws the goods on display to a desirable angle.

SKYSCRAPER (BROKEN BACK)



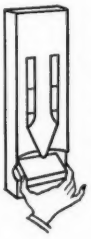
A recent addition to the field of counter display containers which displays contents in two tiers and stays on the counter in an upright or "skyscraper" manner rather than the familiar long horizontal shape. Some are made with an easel in the rear to hold the second tier in a raised position. Patented.

BETTER VIEW DISPLAY STAND



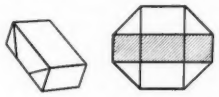
A simple collapsible contrivance used for counter or window display of a two-piece telescope box. Usually made so it will fit within the box. When erected it shows the bottom with the contents showing at an angle, and the cover behind it. The cover is used as a display panel. Makes a most effective window display at little cost. Illustration on left shows the stand in use; illustration on right shows it collapsed for shipment.

SELF-SERVICE CONTAINER



This high, narrow type of container, designed to occupy the minimum of space on especially crowded counters, utilizes the same "automatic" vending machine principle which piles up a single row of packages, providing an opening at the bottom through which a package may drop or be withdrawn. Fits into odd nooks or corners, or may be hung from a nail on a shelf.

TWO PIECE FULL TELESCOPE COLLAPSIBLE BOX



These boxes are glued in collapsible form and shipped to the user in that manner. The user merely pulls them open and the boxes are then ready to be filled. The illustration on the right shows the box in collapsible

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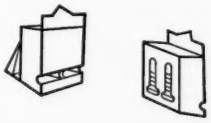
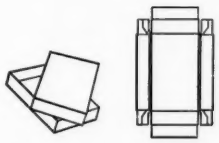
form, as it is shipped; and the illustration on the left shows the box after it has been set up and filled. The great advantages of this box are that no setting up machinery is required and it is inexpensive.

GRAVITY DISPENSER

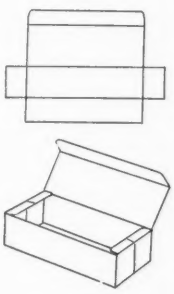


Another type of dispenser which can be equipped with separate dividers when two or more rows are desired for a greater advertising surface. This container can be designed to any desired tilt, and can also be equipped with an easel when the container becomes topheavy. The container also has a sales thermometer in the rear to show when to refill and also to aid in serving from the rear.

TWO PIECE FULL TELESCOPE BOX



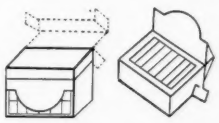
A comparatively recent and important addition to the types manufactured by the folding box industry. Its particular advantage is that it is shipped to the user's plant in flat, knocked-down form and set up by the user at his will. The transportation and storage of empty set-up boxes is obviated, and many progressive manufacturers are turning to this type of box. The corners are particularly strong and the box can withstand a geat deal of stacking stress. It is made with reinforced side and end walls in a variety of types. This box is set up on automatic machines, or on hand setting-up machines. The illustration on the right shows a blank in knocked-down form as it is shipped to users; and the illustration on the left shows the box after it has been set upon the machine.



ONE-PIECE COLLAPSIBLE CONTAINER

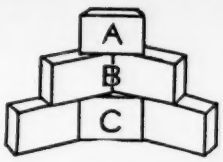
A simple one-piece container serving as a carrier especially useful where quick set-up and economy of cost are factors. It is, of course, shipped to user in knocked-down form as shown in top figure. Below is shown the container set up ready for use. Well adapted for small packages.

WHITEHEAD DISPLAY



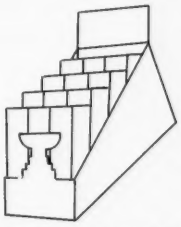
Serves as display and shipping container for twelve cartons. Closed position shown at right, display position at left. Panel is lifted and folded back; notches inserted in slits obtain slanting effect. Display on top panel and sides. Patented.

GIANT PYRAMID WINDOW DISPLAY DUMMY



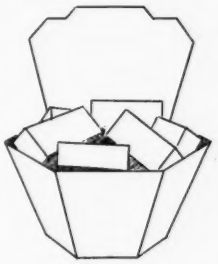
An effective window display in pyramidal form made up of three folding boxes: A, B and C joined together. Distributed in knocked-down form. Easily erected and very stable. The whole unit may be moved from one position in the show window to another without disturbing the form of the display in any manner.

RHOMBOID DISPLAY CONTAINER



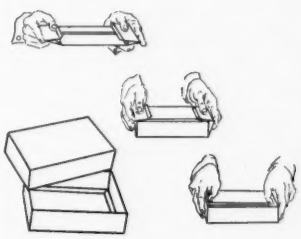
A novel display container and shipping unit. The sloping sides and special construction permit of displaying the goods in slanting tiers presenting a novel effect. Provided with a protective sleeve, it may be shipped packed in set up form ready for display. Especially well adapted for the display of tube or bottle cartons and similar small packages.

BASKET DISPLAY



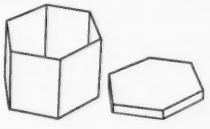
A container designed primarily for floor or counter display. It does not serve as a shipper but is easily set up by dealer, with the contents in a pleasing disorder. Especially well adapted for the display of small packages for quick sales.

TWO PIECE F. T. SIMPLEX



A two piece container shipped flat in knocked down form. They are easily and quickly assembled for use as required by a simple hand operation as illustrated. The set up package results in a rigid container with unusual strength which is obtained by means of the double wall construction.

HEXAGONAL CARTON



A long desired style in the folding box field is this 2-piece hexagonal carton. It is of course equally well adapted to other multi-sided carton types. With the separate cover it makes an ideal package for numerous products and fills a particular need in this field.

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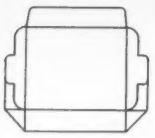
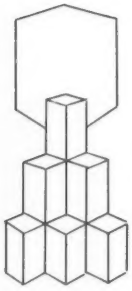


ONE PIECE COLLAPSIBLE BOX

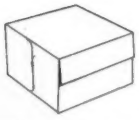
A one piece cover type of container shipped in flat form. It is quickly and easily set up ready for use. The slots permit of locking in the cover making this style especially well suited for baked goods and similar products. The use of a transparent cellulose window in the cover adds an attractive feature.



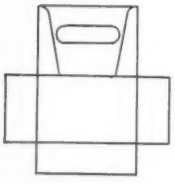
PYRAMID DISPLAY

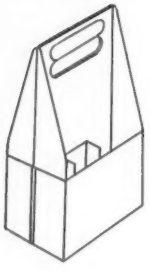
An advertising unit only, designed to replace the actual carton or package. The pyramids are shipped flat and may be easily set up by the dealer and present an unusually attractive feature for window display.

ICE CREAM CARTON



A new advancement in ice cream packaging. A folding type of carton embodying several attractive features. The construction of the lock ends render the box liquid proof eliminating the need of liners. It may be neatly and easily opened through the use of a special flap (see illustrations). The ommission of the liner reduces the freezing time.



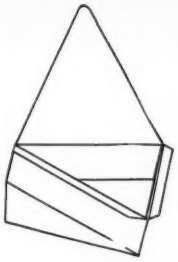


BOTTLE CARRIER

A sturdy container designed to carry six beverage bottles. It serves both as a display unit and with the handle makes a splendid "carry home" package thus promoting the sale of the six bottle unit.

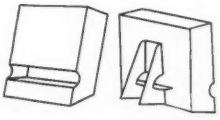
Diagram above shows the carrier at it is received from the manufacturer. Diagram below shows carrier set up ready for use. (Patented).

TRIANGULAR TINSLEY CONTAINER



A novel development of the patented Tinsley style of display container. Triangular in shape—its novel appearance insures consumer attention. It of course incorporates the tilting feature of this display style and similarly serves not only as a display, but as a compact, substantial shipper. Its style is especially well adapted to the display of small articles of odd shape.

TURNER DISPENSER

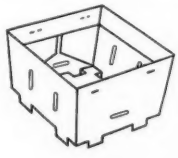


Another variant of the dispenser type of package. The one illustrated is of the easel type, especially designed to serve as a counter style, and is particularly well adapted for the dispensing of small packages. It is simple to set up—serves as a stable carrying unit and permits the opportunity for good display of the sales message.

STEP DISPLAY

The two or three tier display stand illustrated fills a particular place in today's merchandising scheme. The stand is shipped flat—in three pieces and is easily set up by the dealer. It includes a fibre support for the steps and a display card for the rear. It is especially well suited to the display of packaged baked goods or similar packaged material and has proved of real value as a means of securing counter or floor display in various retail as well as the chain stores.

BERRY CARTON



The paper berry basket is now an accomplished fact. This type of paper carton has proved its adaptability and demonstrated its ability to replace the time worn wooden basket. The paper basket illustrated is made up as a folding basket style with wire stitched overlapping sides to set it in proper position for use. The raised bottom effect and slotted sides insure proper ventilation for the contents.

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Definitions and Rules for Figuring Boxboard

THE FOLLOWING DEFINITIONS, rules and tables for figuring boxboard supplement the information as given above under the heading of "Nomenclature of Set-up and Folding Boxboard" and also referred to elsewhere in the PACKAGING CATALOG.

Bundle: A bundle of boxboard is a standard package of same weighing 50 lbs. The weight of a bundle does not vary.

Number: The "number" of board indicates the number of sheets, size 26 x 38 in., in a bundle weighing 50 lbs.

Count: By "count" is meant the number of sheets of any size in a bundle of 50 lbs.

Regular Size: The regular or standard size of all grades of board, except patent coated and solid manila, adopted for the United States, is 26 x 38 in., containing 988 sq. in. The regular or standard size of patent coated and solid manila board is 24 x 36 in., containing 864 sq. in.

Regular Number: The regular number indicates the number of sheets, 26 x 38 in. in size, in a bundle of 50 lbs.

To Determine Count of Odd Size Sheets: If not sure of the regular number of the board desired, determine same by gauge list. Divide the number of square inches in a bundle of the regular number desired, by the square inches in the special size sheet desired, and the result is the "count" or "number" of the special size desired.

To Determine Regular Number of Any Special Size: Knowing the count of the special size, multiply the square inches in special size sheet by the count, the result being the square inches in the bundle. Divide the square inches of the special size by the square inches in a regular sheet ($26 \times 38 = 988$), and the result is the "regular number."

Basis of Gauge Lists: The size referred to in all the gauge lists, excepting patent coated and manila boards, is the regular size 26 x 38, containing 50 lbs. to the bundle. The gauge list and ream weights of patent coated and manila boards are based on the ream, 24 x 36, 500 sheets.

GAUGE LIST NO. 1 FOR PLAIN STRAW AND PLAIN CHIPBOARDS

Solid jute, dry finish; filled wood pulp; filled newsboard, single news vat lined chip and single white vat lined chip.

Basis 26 x 38 in.	No. 1 Finish Thick to No. 2 and Rough	No. 2 Finish Medium	No. 3 Finish Thin to No. 4 and Smooth	No. 4 Finish Extra Smooth
No. 35	0.064	0.060	0.057	0.051
" 40	.056	.053	.050	.045
" 45	.050	.047	.045	.040
" 50	.045	.042	.040	.036
" 55	.041	.038	.036	.033
" 60	.038	.035	.033	.030
" 65	.035	.032	.030	.028
" 70	.032	.030	.028	.026
" 75	.030	.028	.027	.024
" 80	.028	.026	.025	.023
" 85	.026	.024	.023	.022
" 90	.025	.023	.022	.020
" 95	.024	.022	.021	.019
" 100	.022	.020	.019	.018
" 110	.020	.019	.018	.017
" 120	.018	.017	.016	.015
" 130	.017	.016	.015	.014
" 140	.016	.015	.014	.013
" 150	.015	.014	.013	.012

GAUGE LIST NO. 2

For cracker shellboard; plain shellboard, colored one side, colored boxboard, chip back; colored boxboard, chip center; news back; any combination board with solid news back; any combination board with solid wood back. Single manila lined chip; single manila lined chip center, news back; bleached manila lined chip; bleached manila lined chip center, news back; double manila lined chip and manila colored sheli; colored suit boxboard, chip back; colored suit boxboard chip center, news back; mist colored suit boxboard, chip back; mist colored suit boxboard, chip center, news back. Test jute; test chipboard; jute lined chipboard; jute lined chipboard, news back; imitation jute; filled jute (chip center); solid jute (bending).

Basis 26 x 38 in.	No. 1 Finish Thick to No. 2 and Rough	No. 2 Finish Medium	No. 3 Finish Thin to No. 4 and Smooth	No. 4 Finish Extra Smooth
No. 40	0.050	0.047	0.045	0.043
" 45	.045	.043	.041	.038
" 50	.040	.038	.036	.034
" 55	.037	.035	.033	.031
" 60	.034	.032	.030	.028
" 65	.031	.030	.028	.026
" 70	.029	.028	.026	.024
" 75	.027	.026	.024	.023
" 80	.025	.024	.023	.021
" 85	.024	.023	.022	.020
" 90	.023	.022	.020	.019
" 95	.022	.020	.019	.018
" 100	.020	.019	.018	.017
" 105	.019	.018	.017	.016
" 110	.018	.017	.016	.015
" 120	.017	.016	.015	.014
" 130	.016	.015	.014	.013
" 140	.015	.014	.013	.012
" 150	.014	.013	.012	.011

GAUGE LIST NO. 3

For solid news and solid wood pulp board

Basis 26 x 38 in.	No. 1 Finish Thick to No. 2 and Rough	No. 2 Finish Medium	No. 3 Finish Thin to No. 4 and Smooth	No. 4 Finish Extra Smooth
No. 40	0.063	0.060	0.055	0.050
" 45	.056	.054	.050	.045
" 50	.050	.048	.044	.040

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GAUGE LIST NO. 3 (Continued)

For solid news and solid wood pulp board

Basis 26 x 38 in.	No. 1 Finish Thick to No. 2 and Rough	No. 2 Finish Medium	No. 3 Finish Thin to No. 4 and Smooth	No. 4 Finish Extra Smooth
No. 55	.046	.044	.040	.036
" 60	.042	.040	.037	.033
" 65	.039	.037	.034	.031
" 70	.036	.034	.031	.029
" 75	.033	.032	.029	.027
" 80	.031	.030	.027	.025
" 85	.029	.028	.026	.023
" 90	.028	.026	.024	.022
" 95	.026	.025	.023	.021
" 100	.025	.024	.022	.020
" 110	.022	.021	.020	.019
" 120	.021	.020	.019	.018
" 130	.020	.019	.018	.017
" 140	.019	.018	.017	.016
" 150	.018	.017	.016	.015

GAUGE LIST NO. 4

For pasted chipboard

Basis 26 x 38 in.	No. 1 Finish Medium	No. 2 Finish Thin to No. 3 and Smooth	No. 3 Finish Extra Smooth
No. 10	0.212	0.200	0.180
" 15	.142	.133	.120
" 18	.113	.111	.100
" 20	.106	.100	.090
" 22	.096	.090	.082
" 25	.085	.080	.072
" 28	.076	.071	.064
" 30	.070	.067	.060
" 35	.060	.057	.051

GAUGE LIST NO. 5

Container board

Basis 26 x 38 in.	No. 3 Finish	Test
No. 15	.120	300 lbs.
" 28	.100	275 "
" 23	.080	200 "
" 29	.060	175 "

Furnished in 2, 3 or 4 ply pasted and conforms to railway and express requirements.

GAUGE LIST NO. 6 AND REAM WEIGHT TABLE

For patent coated, chip back; patent coated, news back; patent coated, news center, manila back; patent coated, solid manila back; patent coated, blue back; solid manila board.

Caliper Thickness	Basis 500 Sheets 24 x 36 (864 sq. in.)	Basis 500 Sheets 25 x 40 (1,000 sq. in.)
0.011	154 lbs.	178 lbs.
.012	168 "	194 "
.013	182 "	210.60 "
.014	189 "	217.60 "
.015	195 "	225.69 "
.016	208 "	240.70 "
.017	221 "	255.78 "
.018	230 "	266.20 "
.019	238 "	274.88 "
.020	245 "	283.56 "
.021	252 "	291.66 "
.022	264 "	305.55 "
.023	276 "	319.44 "
.024	288 "	333.33 "
.025	300 "	347.21 "
.026	312 "	361.10 "
.027	324 "	374.99 "
.028	336 "	388.88 "
.029	348 "	402.77 "
.030	360 "	416.65 "

Furnished wrapped in reams or half-ream bundles.

Nomenclature of Set-up and Folding Boxboard

BOXBOARD as used in the commercial lines is divided into two classes: set-up boxboard and folding boxboard. Both products are manufactured on the same machine, the difference being that created by the raw materials used in each in the process of manufacture. Briefly the two products may be described as follows:

Set-up Boxboard. The commonest form of set-up boxboard is known as chipboard. Next in quality is newsboard. These are the two basic boards for practically all ordinary set-up box work. Chipboard is made from mixed papers commonly known as paper stock. Solid newsboard is made from newspapers and is therefore a cleaner and more uniform product. Newsboard is also made with a chip center, but to outward appearances it is still newsboard.

These boards are packed in 50-lb. bundles, and the thickness of each sheet is dependent upon the number of sheets in the bundle. However, both chipboard and newsboard may be ordered in various finishes; for instance, both products are sold in a dry finish and water finish, the dry finish meaning the surfaces are free from a high finish, and the thicknesses are termed rough, medium or two-dry and three-dry. In the water finish they run 2, 3 and 4. The two-water finish is not necessarily a smooth board; the three-water finish is considerably smoother, and the four-water finish is about the smoothest that chip or newsboard is made.

Folding Boxboards may be classified as follows:

Bending chipboard is made of mixed papers, but the two surfaces contain fibrous products, such as manila clippings, jute liners and old corrugated boxes. This is the commonest form of bending board.

Next is single manila, which is either a chip or a newsboard with a percentage of unbleached sulphite on one surface, thus making this surface a cream color bending board. Next comes bleach manila with either chip or news back, the surface being made from soft white shavings and bleach sulphite stock. The sulphite produces the bending quality.

Patent coated is produced with a news-back, the surface being made from hard white shavings and bleach sulphite. This board is used for higher

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grade folding boxes, either printed or lithographed.

Folding boxboards are made on a water finish, and are produced on a basis of from 1,800 to 2,200 points per bundle, according to the finish required. In the very common grades of folding boxboard for suit boxes and shipping containers, there is the mist board which is practically a single manila lined furnish, except for the mist colors, which can be made according to specifications.

There is jute lined board, which might have a chip back and the brown surface is produced from the use of boiled wood, and finally container board, which runs 60-, 80- and 100-points. This board is a chip center with a 16-point jute liner pasted on either side.

Tight Wrapped Packages

By CARL E. SCHAEFFER

Stokes & Smith Company

THE TIGHT WRAPPED PACKAGE is now a standard type of package with many manufacturers and packers of food and grocery products. This type of package was first adopted a number of years ago by some of the cereal manufacturers, where its greatest advantage was in keeping the weevil from getting into the contents. This style of package proved so satisfactory for cereals that it has been adopted for use with many other products, such as flour, soap powders, salt, coffee, etc.

Various types of cartons with inside bags or liners can be used with the tight wrapped package, as well as different types of opening devices. In the salt industry the tight wrapped package is now being used by many of the leaders, and one of the most satisfactory salt packages is a carton made of asphalt-lined board which is tight wrapped on the outside. For coffee, wax or parchment paper liners are generally used on the inside of the carton and the cartons are tight wrapped on the outside. For flour, the regular chipboard carton is used and some of the packers have these made with a blue lining on the inside which gives a whiter color to the flour. Various combinations of cartons, liners, and labels can be used to insure the product getting to the consumer in the best possible condition.

Another advantage of the tight wrapped package is for the packer or manufacturer who packs private label brands for different customers. If he uses the tight wrapped package he can use the same carton and merely have different labels for the different brands. This means a saving as it is not necessary to carry a number of different printed cartons on hand. With the tight wrapped package various types of labels giving different styles of end folds can be used to suit the conditions. Some labels are die-cut so that each end flap of the label is glued down separately. Others are rectangular, making a gusset fold on the end.

Recently the varnished label has been adopted by a number of packers and manufacturers using the tight-wrapped package, and the package tight-wrapped with the varnished label makes an ideal container for many food and grocery products. The varnished surface makes the package attractive, the colors show up to advantage and the varnished surface will not accumulate dirt or dust as quickly. Also, the package is more moistureproof as the varnish gives the extra coating on the outside.

The machines for tight wrapping packages are built in different styles and types to suit the conditions. There is a semi-automatic machine which is hand fed and adjustable for different sizes and has a production of 10 to 15 tight wrapped packages per minute. Then there is the fully automatic machine usually built for one size package to be wrapped and has a production of 60 to 70 tight wrapped packages per minute.

With the tight wrapped package the plain unprinted cartons are filled and sealed in the regular way, there being a number of different makes of semi-automatic and full automatic carton filling and sealing machines on the market. After the carton is filled and sealed it is fed into the tight wrapping machine which automatically feeds the paper label as the carton enters the wrapping machine, glues the label all over on the blank side with a thin coating of adhesive and wraps it tightly around the filled carton, making a perfectly tight sealed, non-sifting, weevil-proof, and attractive package. This package costs practically the same as or possibly a little more than the printed cartons, but there are so many advantages in the tight-wrapped package which more than offset any slight additional cost. Some of these advantages are:

Better appearance of the package, stimulating sales. Printed or lithographed colors show up to better advantage on paper labels than when printed directly on cardboard.

Greater strength. The wrapper glued tightly to the carton strengthens the package, especially at the corners where there is generous overlapping of the paper.

Better preservation of contents. The contents of the package are fully protected against dust, odors, weevils, etc., and there is no loss from leakage or sifting so that the package and its contents reach the consumer in perfect shape.

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Set-up Paper Boxes

By HOWARD P. BECKETT

National Paper Box Manufacturers Association

THE SET-UP PAPER BOX is so called because it is completely fabricated and "set-up" by the paper box manufacturers, whereas other types of paper board containers, such as cartons and folding boxes, are delivered "knocked-down."

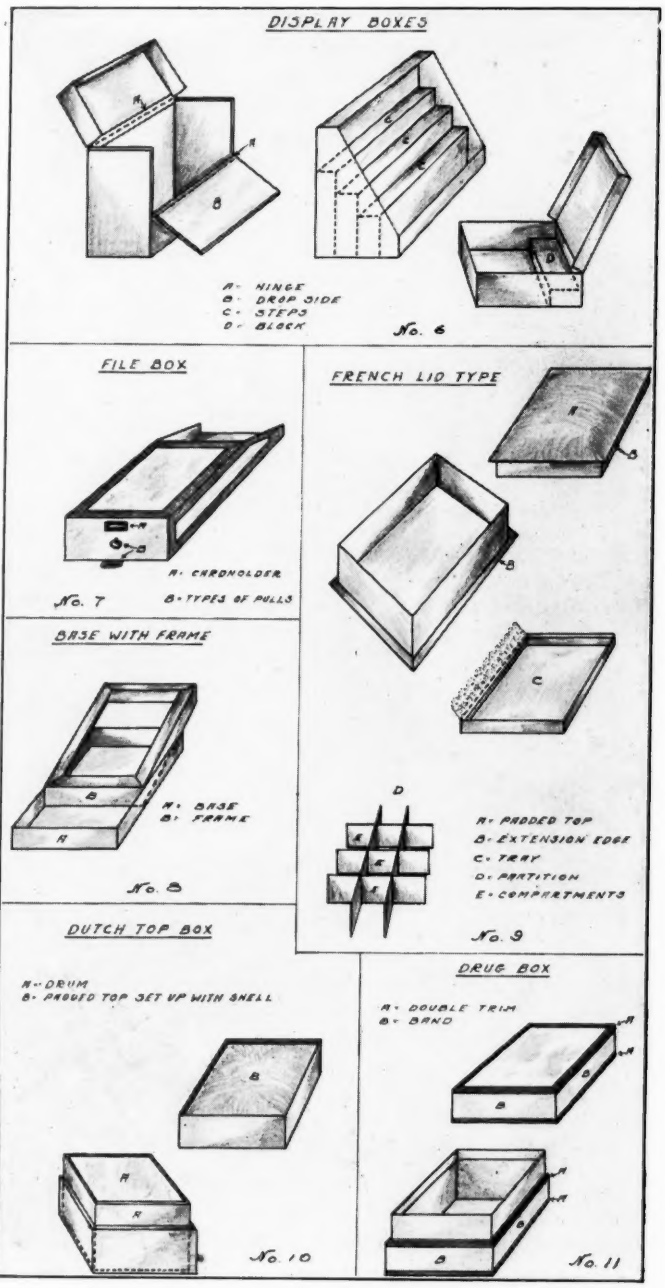
The set-up paper box differs from other paper board containers because it is made from paper board, covered with paper or some other material, whereas the folding box consists of board processed for printing or lithographing. The rigidity of set-up boxes is inherent, the paper board used being specially made to prevent warping. This board is scored, bent at the scorings and the corners reinforced with kraft stay paper. It is then covered by various processes, depending upon the size or shape, with paper or other cover material.

Set-up boxes, because of their adaptability to size, shape and decoration, represent the highest type of paper box development. Combining the utility factors of content's protection, neat storage, with an aesthetic appearance value, they are durable and strong. They afford an attractive container for products not immediately consumed, such as candy, stationery, cosmetics, hosiery and the like. They are sales-begetting, in that they encourage the packing of multiple units, such as two or more pairs of hose, neckties and handkerchief sets, cosmetic products, sheets and pillow cases, towels, etc. They have become synonymous with gifts, creating an atmosphere of elegance and evidencing the thoughtfulness and attention to detail, given by the manufacturer or the person using them.

They may be built with trays, platforms or divisions, and thus further embellish or display the contents. They are easily opened, permitting examination of the contents.

Modern equipment and box manufacturing ingenuity make the set-up box comparable in cost with any type of container, notwithstanding its multitude of advantages. Where comparatively small quantities or where various sizes or finishes are desired, the set-up box is found to be the cheapest container that is available.

Indicating the wide choice of finishes, it might be well to mention that there are literally thousands of patterns and colors of fancy papers available for the exterior or interior finish of the box. Likewise lithographers specializing in box wraps can



Types of set-up paper boxes and their construction

conceive and execute any wrap design that the artist prepares. Added to this versatility of finish is the service of the box manufacturer who has at his command experts and specialists in box construction and design.

Set-up boxes especially recommend themselves:

(*a*) When unique, irregularly outlined, curved surfaced, hexagonal, octagonal, heart, round containers are desirable.

(*b*) Where strength and appearance are essential.

(*c*) Where interior packing or platforms are necessary for display or shipping purposes, such as silverware, perfumery, etc.

(*d*) Where an atmosphere of quality or the gift sentiment is emphasized.

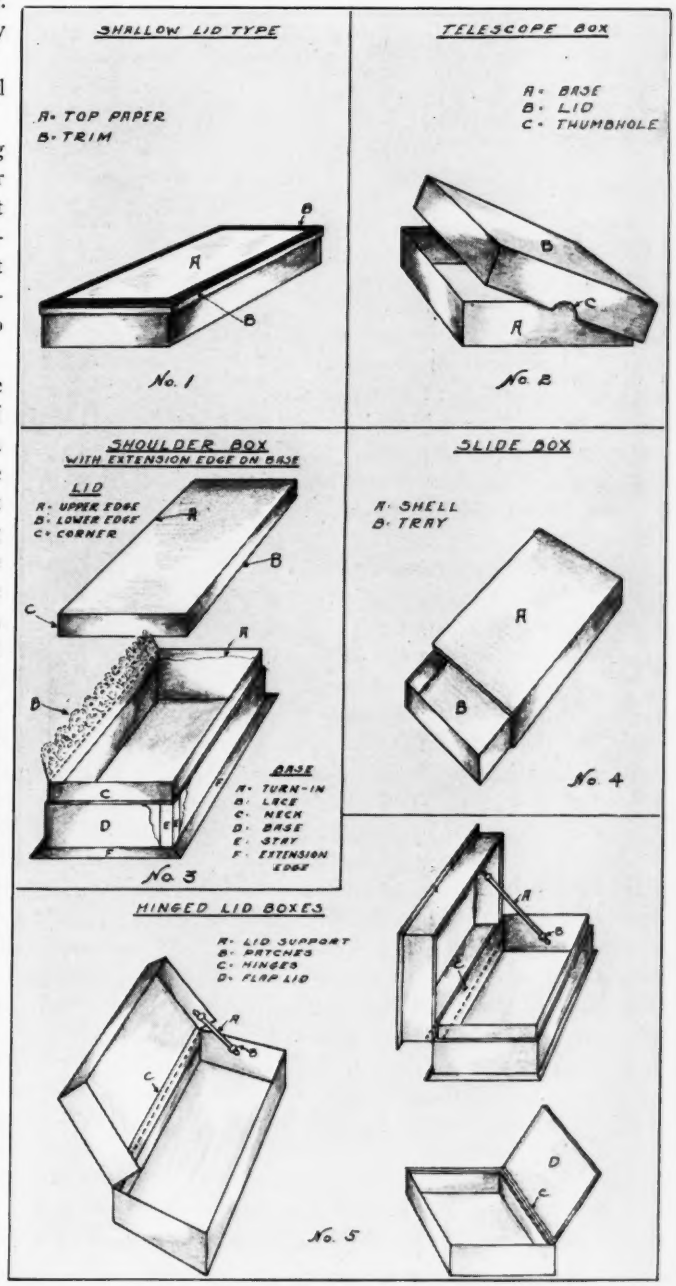
(*e*) Where a variety of sizes and finishes is sought.

No machinery is needed in closing the box, or in setting it up. The user does not have to do anything except fill it. Set-up boxes are especially adaptable to the manufacturer whose output is small or varies greatly in size, quantity, or combination, or is subjected to seasonal variation.

It may be found desirable to have the container possess a higher degree of utility than appearance, in which case a simple container is manufactured by the process of selecting the proper weight board, staying the corners and covering it with a simple paper. Again, the product may be one which requires the development of aestheticism. In such a case, the box manufacturer is required to prepare a box which is virtually a frame for a picture and must harmoniously set off the product to increase its eye appeal. In this latter case, the box designer has at his command thousands of beautifully designed papers, silks, or lithographs, from which he chooses the cover of the box. By reason of the elasticity of his equipment, he is permitted to construct a container in a multitude of shapes and sizes.

While the cost of the set-up box is comparable with other types of paper containers or wrappings, its actual cost to the manufacturer is frequently lower, for the reason that the selection of the container often removes the product from the level of competition and gives its user a distinct competitive advantage.

The well-designed set-up paper box is of great assistance in making the sale—it gives the final buying urge—it is the personal introduction of product to purchaser at the place where the sale is made. It is the ultimate advertisement, the follow-through of the advertizer, and as such must contain the elements which mark good advertising. It must attract attention, create desire of possession—and stimulate action—make the sale. Other sales-betting factors of the good advertiser—the set-up box—are beauty, originality, convenience, the sense of fitness. The size, shape, quality and cost of the box depend upon the product and upon the manner of marketing—the type of retail outlets. A set-up paper box need not be high priced, nor need it be unattractive because of



Types of set-up paper boxes and their construction

low cost. Boxes are available in beautiful shapes and colors for the expensive specialty shop or the "five and ten." An interesting example of a set-up box which has been recently adopted as a substitute for wooden boxes is a new patented fibre cigar box.

What unit will the public buy? That will determine the size of the container. The shape may be governed by convenience in handling. The shape is important as well as design, for it may become the attention-getting or identifying factor. The convenience and utility of the box when the consumers uses it as a storage receptacle are important. The layout, the art work, the text matter should receive attention. The product may be new and need introduction. Perhaps no one has time to inform the sales person of its merit. One may accomplish this by using the inside cover of the box. Again, a manufacturer may want the big department store to give his product a front window. Make the box a work of art—it will get there. There are great possibilities with tasteful paper or lithography. Some manufacturers have put over sales campaigns with boxes using a poster top. The set-up box is the cheapest and most effective "dealer help."

Progressive manufacturers maintain departments for studying packaging needs. The manufacturer of a product which must pass through retail channels of distribution will do well to get in touch with a progressive boxcrafter and enlist his services.

Uses of the Paraffined Carton

By M. DALE OGDEN

PARAFFINED CONTAINERS are being used extensively every year for packaging butter, ice cream, oleomargarine, meat products, nuts, etc., because of a definite service that waxed cartons perform for these and like products. An outstanding example is shown by the increased sale of print butter in paraffined cartons. To one not conversant or directly concerned with the uses of the paraffined container, the thought that first comes to mind is of the butter and ice cream cartons. It is true that the dairy industry represents the principal market for paraffined containers, but it is likewise true that many wax-treated containers are being used every year for various other products.

The first and foremost function of a paraffined container is to afford moisture-proof protection. While maintaining and protecting the moist product which it contains, the penetration of moisture through the carton walls from the exterior is also prevented by its use. The packaging of cheese represents an example of the former; the storing of products in a moist atmosphere, such as iced refrigerators, an example of the latter. The paraffined carton performs another function in its ability to protect contents against contamination by foreign odors. Butter, lard, oleomargarine and like products have an affinity for taking up odors from vegetables, fish, and so on, that may be in close proximity. We might say, then, it is one of the virtues of the paraffined container to maintain the original sweetness and purity of a product as when it was first produced.

The first paraffined containers were waxed "in the flat" and remained so until they were wrapped about the print of butter, brick of ice cream, or whatever product they were intended to protect. Later it became desirable, as well as necessary, to produce a paraffined container that was glued along one side and with flaps that would tuck in at both ends. Several years of patient research and experiments were required before a dependable machine was developed that would perform the operation of folding and gluing a paraffined carton. The problem encountered lies in the fact that glue will not adhere to a paraffined surface, so that it was necessary to remove the paraffine from certain portions of the container preliminary to a gluing operation. A machine was finally perfected whereby paraffine is removed on certain surfaces of the carton, waterproof glue applied and the carton folded into shape so that the glued surfaces might adhere to each other.

Many changes have been made in designs, improved type composition and the adoption of certain sizes and types of packages best suited to the consumers' requirements. The grade of carton board has also been subjected to improvement. Where cheap manila stock was once used (with doubtful guarantee of sanitation), we find today the greater percentage of paraffined containers made up of pure bleached sulphite lined manila board, ideally adapted, both from the standpoint of strength as well as sanitation, to the packaging of the most delicate and perishable food products.

Wooden Boxes as Packages

A wooden box possesses strength and, properly constructed, incorporates most of the structural elements of the successful package. In re-use it is particularly valuable for even a comparatively small box can be utilized as an ideal cigarette humidor or a container for studs, cuff links and many other small articles after its original contents are gone.

Wooden boxes for packaging may be divided into

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two classes: first, the cheaply fabricated box with locked corners, such as are used as chalk containers, cheese boxes and children's pencil boxes. Second, the high grade cabinet box which might either be made of solid woods such as walnut or mahogany or veneered with domestic or imported veneers.

The first classifications could be used only for a limited type of product, inasmuch as they cannot be attractively made or finished, but, of course, are low in price. The second classification are made entirely with mitred corners and shaped bases and lids. These cabinet boxes have a great variety of uses and are extremely well adapted for high-grade, expensive merchandise. It is possible to price these cabinet boxes as low as 25 cents each and the higher quality ones are limited only by the amount of money the packager has to spend for his package. Beautiful imported woods such as Carpathian elm burl, Thuya burl, East India satinwood, etc., are often used for the better grade cabinet boxes.

There are the natural grained and those that are "covered" either with pigment lacquers or other coverings, from embossed papers to fine leathers, genuine or artificial. Natural grained boxes employing all the natural effects of the lumber of which they are constructed find ready acceptance as a general rule among the conservatives.

On the other hand, the advent of colored lacquers has made possible the use of cheaper lumbers, thus reducing the costs of such containers, and the creation of varied color effects. Such covering materials as embossed or figured papers, silks, figured woven goods, art papers and the like, over a wooden shell have been used in producing effective backgrounds, as well as attractive and much desired containers, both useful and ornamental.

Through the use of stencils—both screen and metal—multi-colored effects can be produced, enhancing the attractiveness of the unit; as well as decalcomania, and the innumerable varieties of prints being offered, from Godeys to reproductions of the masters.

In the lining of these boxes decorative and imitative papers are used, also fabrics such as velveteen and silk, and these are selected with the idea of obtaining harmony or contrast with the exterior design or coloring. Likewise, strap or brass hinges, locks, clasps and other small appurtenances are applied to the boxes and add to their effectiveness and attractiveness. Partitions, as well as removable compartments, may be placed in the original boxes as they are supplied to the purchaser or after the contents have been removed.

Wooden boxes have long been used and highly regarded as containers by several of the packaging groups because of their strength and durability. But with the possibilities offered for the application of color and design to wooden boxes there is a renewed interest on the part of the manufacturer who seeks effective and economical containers.

Tin Packages and Cans

By HOWARD DYGERT

WHILE TIN PLATE was first utilized in the container field for plain cans, it is a material so ideally suited for packaging purposes that its use has broadened greatly during the past two decades. So great has been the advancement in the art of lithographing on tin and so extensive the improvements in the methods and speed can manufacturing, with resultant lowering of costs, that colorful, well designed, and skillfully lithographed tin packages are now quite as commonly seen in retail stores as were ordinary paper-labeled cans twenty years ago.

Among the many advantages claimed for tin containers are strength, protection, attractive appearance, convenience, ease in handling and shipping, absence of deterioration, and air-proof, moisture-proof, grease-proof and vermin-proof qualities.

Two general classifications are made by manufacturers in this industry.

Sanitary or Packers' Cans: Plain tin and lithographed cans for vegetables, fruit, milk, and for all types of perishable food products requiring hermetically sealed packages are ordinarily referred to as sanitary or packers' cans. They are sold chiefly in 27 standard sizes, all cylindrical in shape. These standards have been determined by the manufacturers and the National Canners' Association working co-operatively. There are exceptions to the standards, however, as in the instance of the special shapes and sizes used for packing chickens and hams.

General Line Packages and Cans: This classification includes all tin containers which do not fall under the foregoing head. The extensive variety of shapes, sizes and types available would require several closely typed pages for complete enumeration. New items are being added constantly to meet specific requirements.

The most common shapes are round, square, oblong, and oval, these being best adapted to high speed production methods. In most instances each shape can be made in a variety of heights, the equipment being adjustable in this respect, thus providing for turning out packages that are "flat," "squat," "medium," or "tall" on one line of ma-

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chinery. Many special and novelty shapes are also available, of which the Log Cabin syrup cans and odd-shaped talcum packages are typical examples. Within certain limitation determined by the characteristics of tin plate, no end of new shapes can be developed if and when the demand justifies.

Sizes range all the way from small pill and aspirin tablet boxes to cans and drums of many-gallon capacity.

For closure both ends may be seamed on, as in the case of key-opening packages and those for which a can-opener is essential; or only the bottom so constructed and the top adapted for any one of a large variety of closures. Examples: slip cover, friction cover, double-tight cover, Upressit, Amerseal, Duplex, Barrol-type, etc. For more complete data, the reader may refer to article under heading of "Closures" elsewhere in the CATALOG. One type of growing popularity is the drum-head seal, which comprises a paper disc crimped in the package above its contents and just beneath the removable cover to prevent tampering with the packaged product.

Improved methods of lithographing, together with the better inks now available, make it possible accurately to reproduce on tin practically any and all of the colors in their many shades, values and chroma. The inks are baked on at regulated temperatures. This results in a printed surface which will not rub off and comes near to being indestructable. A variety of finishes may be had: dull or flat finish; gloss or varnish; high gloss; eggshell, which is a rough, pebbled effect; or crystalized finish, which is accomplished through application of a special transparent varnish that forms into small crystals when passed through the baking oven.

Creative departments of a high order are maintained by the larger firms of the industry for designing packages for their customers and for extending co-operation to advertising agencies and to package designers and product engineers.

Well-equipped research laboratories, the personnel of which comprises expert and specially trained chemists, are maintained for studying bacteriology, sterilization, nutrition, corrosion, processing and all other subjects in any way related to packaging in tin. This research work is far reaching and is carried on entirely at the expense of the can manufacturers.

A number of special processes for packaging products that possess a tendency to deteriorate rapidly have been devised. Possibly the best known of these are the vacuum and vita-pack processes now in quite general use for coffee, nut meats, etc. The vacuum process has recently been found particularly advantageous for green corn.

For each industry where substantial volume is to be packed, mechanical genius has devised high speed filling and closing equipment to meet the requirements of quantity production. The filling and weighing equipment is normally purchased by the packer from one of the several makers of such machinery. The closing equipment is usually supplied by the can manufacturers on a rental basis.

Fancy Packages and Gift Boxes: Without question, the two most vital functions of any successful package are (1) adequate protection to contents and (2) maximum selling appeal. In the early days of unit packaging, this industry sought primarily to meet the first requirement. In this effort, it was highly successful. The types of tin containers developed were second to none in providing adequate product protection. When, as a result of national advertising and other influences, the merchandising function of the package began to be more generally recognized, the progressive firms in the industry were quick to sense the change, and they are deserving of commendation for the noteworthy manner in which they have kept well abreast in the rapidly changing packaging parade.

First, talcum, candy, biscuit, coffee and miscellaneous other types of cans began to appear in more appealing dress. Quaint old designs were replaced by new ones in keeping with the trend toward point-of-purchase advertising. Then were introduced fancy packages of various types. These were used for the better grades of chocolates and bon bons, for fruit cake and fancy biscuits, for cigarettes, for figs and dates, and for manicure sets, face powder and body talcum. Also came dual-purpose packages: cannister sets, lunch boxes, waste baskets, bread and cake boxes, toy pails, and a variety of others. They were used for coffee, peanut butter, crackers, biscuits, confectionery, etc., and were effective in stimulating sales because of their novelty and their utility value after being emptied.

Possibly the latest development in tin containers are the elaborate gift boxes used for holiday or special assortments of cosmetic items, better grades of hand soaps, cigars, fancy food products, etc. Such manufacturers as Beechnut Packing Company, Armour and Company, National Biscuit Company, and Wilson and Company, for example, have found the lithographed metal gift box an effective means of getting a variety of their related or unrelated products into an appealing form highly acceptable for gift purposes.

The reader will appreciate that in the limited space alloted this treatise, it is quite impossible to cover fully and adequately the broad subject of tin packages and cans. It appears expedient to point out, therefore, that the manufacturing of quality tin containers, either plain or lithographed, is an intricate business and much depends upon the skill, experience and equipment of the producer. To select one's source of supply upon the basis of price alone may result in serious disappointments.

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Fibre-Bodied Cans

By ARTHUR H. GRACE

Vice-President, Sefton National Fibre Can Company

WHILE usually confined to the packaging of dry products, the fibreboard container also has its place as a temporary container for hot or cold liquids. Generally speaking, there is an unlimited field for the use of fibre-bodied cans in packaging dry products whereas, in the case of liquid products, their use is restricted to temporary purposes only.

To understand correctly the distinction between and the uses of fibre-bodied cans, one must distinguish between the types of cans manufactured for dry products and those manufactured for semi-moist or liquid products. This presentation deals only with the dry product container.

Few manufacturers carry any stock of manufactured cans. Specifications vary, and, where labels are involved, carrying a stock would be particularly impractical. Certain round, all-fibre cans—commercially known as "drug packers"—are stocked by some manufacturers in assorted sizes, for standard capacities of drugs and chemicals. However, these so-called "stock" sizes are not necessarily uniform so far as various manufacturers are concerned. (As a matter of fact, the Bureau of Standards of the United States Department of Commerce is at present working on a standardization program.) Mail cases for bottled liquids are also stocked by some manufacturers, these cases conforming to postal regulations and accommodating standard RX bottles.

Fibre cans are sometimes called "paper" cans. This is incorrect. While the accurate technical term would be "fibreboard" cans, custom has established "fibre" cans as the accepted nomenclature.

In looking at any packaging problem, so far as fibre-bodied cans are concerned, the cubical capacity of the package having been established, it is necessary to determine the shape of the package which will best serve the purpose—not only from the standpoint of the nature of the product itself but also from the standpoint of shelf display space, label design, and style of top. The next step is to determine whether a metal-end can will be required or whether a fibre-end can will serve the purpose equally as well. Custom establishes rather definitely the shapes and sizes required for certain types of products, unless there is a specific desire to vary this established practice. If an all-fibre can is selected, the shape of the can is restricted, from a manufacturing standpoint, to one of two possibilities, either (1) a round-shaped can, or (2) an oval-shaped can. On the other hand, if a metal-end can is decided upon, practically any shape can be manufactured. While the round-shaped container continues to enjoy an immense popularity, practical usage necessitates other shapes, which are gradually being adopted for various products until today one can purchase a fibre-bodied can in almost any shape desired—round, oblong, oval, square, or obround—provided the manufacturer has the necessary body-winding mandrel and dies to construct that particular size and shape.

All can bodies are constructed of fireboard, the kind of board used as well as the point thickness of the body wall being determined by the type of construction desired and also by the nature of the requirements.

To the can body either fibre-drawn caps or metal ends are applied. These two types of ends are not necessarily interchangeable—that is, a manufacturer may be able to supply a fibre-end can in certain sizes whereas, if metal-end cans are required, these same sizes cannot be furnished—due to the fact that construction operations differ. Therefore, while it is possible to make a fibre-bodied can in any size specified, unless the manufacturer is equipped with the exact size winding mandrel for the can body and the necessary dies for the particular type of end required, new tools would have to be manufactured before cans could be constructed.

A can body may be one of two styles of winding: (1) spiral, or (2) convolute. Each type of construction has its own particular merits.

Spirally wound can bodies are usually manufactured from a fibreboard commonly known as "straw chip." Straw board, straw chip, chip board, news board and test liners are some grades of body stock used as well as manila-lined stock or coated-one-side stock, depending on the customer's specifications or based on the nature of the product to be packaged.

Each can body consists of two or more plies of fibreboard, each ply being a separate unit that permits of variation in the nature of the stock used as well as the caliper point thickness of each ply. Spirally wound cans are usually made from stock ranging in caliper thickness from .008 points to .040 points, the total body wall thickness depending on the number of plies of stock in the body and the caliper point thickness of each ply. While manufacture has standardized the usual requirement as to caliper thickness of each ply of board used as well as the number of plies of fibreboard and the total body wall thickness required, all of these may be varied as conditions necessitate. The different plies of fibreboard are wound into a con-

tinuous tube form and are held together by the use of various kinds of adhesives.

Spirally wound can bodies are usually made with a so-called "straight" side wall. Where a slip-on cap is used, either fibre or metal, a recess is sometimes provided at both ends of the body, in order that the cap may fit flush with the can body, permitting of smooth hand or automatic label application. In no case can the body wall be tapered; only a *straight side wall* can be furnished in any so-called fibre can. Either fibre-drawn caps or metal ends can be applied to these can bodies.

Convolutely wound cans are made from one single and continuous sheet of fibreboard, cut into ribbon width equivalent to the height of the can requirement. The nature of this board differs from that used in the construction of spirally wound cans in that the quality is usually of a higher grade and the caliper thickness does not exceed .012 points. The stock generally used is can fibre, each manufacturer having his own grade of special stock for this particular type of construction. One ply is wound directly upon another and each ply is laminated to the other by various grades of adhesives. The winding mandral conforms in size and shape to the customer's specifications, only one can body being wound at a time. As in the case of spiral cans, either fibre-drawn caps or metal ends can be applied to convolute can bodies.

Because of the nature of some products it is necessary to treat the fibre can body to make it moisture-resistant and to make it capable of resisting body penetration. This can be done in two ways: First, through the use of body liners; and, second, through the use of various preparations.

Various kinds of liner papers can be used, the exact stock to be used depending on the requirement. Glassine, parchment (genuine or imitation), grease-proof, paper kraft, metal foil and others are used for liners to furnish resistance to body penetration. Gelatin, paraffin, asphalt, rosin and other similar commodities may be used to make the container moisture-resistant. These substances may be used between the plies or may be applied to an individual ply at the time the body is wound. The can bodies may also be treated through other processes, such as dipping, spraying, or impregnation of fibre before or after winding.

While the selection of a spirally wound can may prove a disadvantage because of the restriction to the round or oval shape, a distinct advantage of this type over the convolutely wound container is the fact that various kinds of liner paper can be automatically wound into the can body at the time the cans are manufactured. In a convolutely wound can the liner must be laminated to the body stock before being wound, the liner encircling the can body the same number of times as there are plies of fibreboard in the can body.

Where body treatment is required, consideration must also be given to treatment of the ends of the container. Fibre ends can be given much the same treatment as fibre bodies, as outlined above; but when metal ends are used, treatment is rarely necessary.

Fibre-Drawn Caps

From a manufacturing standpoint, can bodies fitted with fibre-drawn ends are restricted to two shapes: round and oval.

Caps, obtainable in various standard colors, are drawn under pressure, moisture, and heat, the size of the cap conforming to the size of the can body wound. Varying atmospheric conditions tend to affect fibre caps when drawn, unless immediately applied to the container body upon completion of manufacture. One end is usually glued on to the can body and the other slipped on loosely, to be replaced after the container is filled. An identifying mark on the can body usually indicates which end has been glued on. Fibre caps may be embossed when drawn with various designs of embossing, where embossing dies have been made.

Caps may be lined with various types of paper to afford resistance to penetration by laminating the liner to the cap stock before the caps are drawn; or caps may be treated with paraffin, gelatin, rosin, asphalt, and other preparations to secure moisture resistance.

Can Ends—Metal

Metal ends are stamped out in sizes to fit the can body, one end usually being seamed on (or crimped on) to the body. The other end is shipped separately, to be slipped on or seamed on after the product is packed.

Metal ends are usually made from tin plate, which may be plain, coated, or lacquered, one side or two sides, depending on the appearance desired. Metal ends can be embossed, where dies are made, at the time of stamping out.

Where large quantities of cans are involved, seaming machines are usually furnished to the customer by the manufacturer, on a contract yearly rental basis. Where small quantities are involved and both ends are to be seamed on (closed), a small friction opening is left in the bottom of the can, through which the can is filled and the opening closed by a metal plug, which operation is performed after the container is filled. Because of the nature of the product packed, some metal-end containers must be sanitary-lacquered inside.

The use of fibre-end cans is also restricted in that few types of fittings can be furnished with a

fibre top. Aside from a solid top, the most commonly used on a fibre-end can is the spout top, as on a salt can. A perforated top or a perforated undercap can be supplied as well as a metal plug top.

Various types of fittings have been devised for metal-end cans, certain fittings being standard for certain types of products. Among these are included solid tops, dredge, perforated, spout, slot, plug, and buffer tops.

Labels and Wrappers

The question of when and how the can is to be labeled should receive attention when consideration is being given to the type of construction desired or required. For obvious reasons, practically without exception all labels are furnished by the customer but are made up in accordance with size specifications furnished by the manufacturer. The can bodies cannot be printed or lithographed.

Decorative papers can be used as wrappers for the outside ply of spirally wound cans. These papers, usually furnished in roll form, are slit to ribbon widths and applied to the can body in continuous form.

Printed labels for spirally wound cans, when supplied by the customer and applied by the manufacturer, must be hand applied—either singly or in strips.

Up to the present time no machine has been invented which is practical for the automatic labeling of an unfilled spiral can. Printed labels, however, can be automatically applied to cans after filling which is advantageous in the case of certain types of cans. Convolutely wound cans can be automatically labeled at the time the can body is wound. Whether a decorative or a printed label is used is immaterial so long as the nature of the stock does not conflict with manufacturing specifications. Labels for cans of the convolute type of construction are furnished singly, cut to size.

The paper stock used for labels in all cases should conform to a uniform basic weight, not heavier than 25 x 38, 60-lb. stock, and ungummed. Coated-one-side litho label or any plain finished book paper will serve the purpose. Any design or color may be used in printing labels. They may be plain or varnished, just as long as the size and specifications conform to the manufacturer's layout, which will be furnished without charge.

Special and Fancy Paper Bags

By H. S. DANIELS

Union Bag & Paper Corporation

LIKE EVERY OTHER STYLE of container, special bags have practical limits to the fields in which they may be used. But their convenience and economy is steadily extending the boundaries of those fields, and each month sees a special bag being developed for some product that has never before considered a "paper bag" as a possible package. The improvement in range, styles, materials and printing facilties available in special bags has naturally done much to widen these fields.

There are four major services that a special, made-to-order paper bag is well adapted to perform:

1. An attractive, *economical,* retail package.
2. A protective covering—sometimes an insulation.
3. A measure, or convenience unit.
4. A means of identification for products not easily trade-marked or branded upon themselves.

Any manufacturer who has one of these four problems to contend with may well investigate the possibilities of a *tailor-made* bag to give him the most economical answer. It is seldom that the four groups are drawn sharply; usually a special bag combines several of these services at the same time. The package that is needed as a measure, for example, can increase sales by being designed as an attractive retail package, and can protect the contents against deterioration by having a waxed or glassine liner. Nor do these four groups represent the entire range of special bag uses, by any means. But they are the most common requirements that have created made-to-order bags, and as such, a few examples may be of interest.

Retail Packages: The trend toward smaller kitchens and less pantry shelf-room in our homes naturally results in a demand for smaller, prepacked units of many products formerly sold in bulk, or in large packages. Flour, coffee, rice, sugar, etc., are all going into smaller and smaller packages. Recently the "10-cent size" has gained much popularity. Attractively printed, *duplex* fancy bags offer the ideal means of adding much smaller units.

In the chemical field, insecticides, fungicides, paints (calsomine and dry colors), cleaning powders, patching plaster, etc., have all adopted a retail household-size unit.

Protection: Dry goods and textiles, such as shirts, blankets, gloves, diaper cloths, etc., are protected from soilage until the purchaser himself breaks open the package. The elimination of shopworn "seconds" more than pays for such protection, without considering the added prestige and sales-incentive

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that individual wrapping always gives to any product. Top-quality fork, hoe and axe handles, canoe paddles and baseball bats also use special bag protection against soilage—and combine this protection with the opportunity for trade mark identification and display. Two outstanding examples of the *insulation* service are (1) the bag used to cover blocks of Dry Ice (which is too cold to touch with the bare hands) and (2) the duplex asphalt paper bag liner for egg cases which, by retaining the CO_2 gas in the case, so helps to preserve the freshness that eggs so packed bring from one to four cents a dozen premium in the markets where official grading is required. Still another form of protection is the wax-lined bag in which your laundry returns the "damp dry" portion of your wash—the bag retaining the moisture until it is convenient for you to iron the pieces.

Measure: In the drug and chemical fields, particularly, paper bags have been designed to serve as exact measures for contents that must be mixed before using. An example of this is the insecticide bag, where the amount of the contents is in exactly the right proportion for a given amount of water, and it is only necessary to break the entire bag into whatever quantity of water the directions (printed on the bag) call for. Another very popular "measure" use is the coffee bag for restaurant trade. The bag is designed in the proper size for a given blend of coffee so that the whole bag may be dumped into the tall nickel urn full of water. Such "measure" bags make the proper proportioning of the product foolproof, even though an illiterate laborer mixes his own insecticide and the janitor prepares the early batch of coffee.

Identification: Maybe you have purchased a wrench lately and wondered where it got any protection from being packed in a special paper bag. But while you were wondering that, you were reading the trade mark of that particular wrench, and possibly some advertising matter that was printed on the bag. Paint brushes and cooking utensils are other examples of products that do not provide surfaces suitable to trade mark or advertising printing, and so are packed in special bags which can be so printed.

More necessary from a practical standpoint is the special bag that has been developed for containing and identifying machine parts. Sturdy kraft bags, equipped with a tin-tie (which permits repeated opening and sealing) and printed with the name or number of the part they contain, are saving time and loss in the assembly plants and service stations of most of the large automobile companies today. Typewriters, vacuum cleaners and electrical equipment are all finding the printed parts-bag equally convenient and economical.

The foregoing is in no sense an attempt to cover the field of special paper bag uses. It touches only a few scattered examples in an attempt to illustrate the very fact that these uses are extremely widespread. Probably your particular product hasn't been mentioned, but it is entirely possible that a special paper bag has been worked out for that product, and is today being used somewhere in the country.

In any event, the rapid development of bag making and printing equipment, and the knowledge that a special bag is generally much less expensive than any other form of container, makes it advisable for any merchant to call in a special bag engineer who knows his business, and let him go over his packing set-up. The bag engineer knows better than to recommend a bag where it won't do the work, and he may know of a type of bag that will do it at considerable saving over present methods.

Transparent Bags

By J. M. MUNSON

The Munson Bag Company

IT HAS ONLY BEEN during the last few years that the maxim "Seeing is Believing" has played a real part in the field of bag manufacturing and packaging of bulk merchandise. The advent of transparent cellulose sheets, known to the trade as Cellophane, Sylphrap, Kodapak and the like, gave bag manufacturers a medium with which to work. Any one of these products, when converted into a bag, not only displayed its contents but gave to it a real protection and improved appearance.

At the beginning, the producers of paper bags found that these sheets did not handle like paper and the task of producing the first transparent bags was taken over by envelope manufacturers in the form of a die-cut envelope. This envelope or flat bag being of normal or none-moistureproof stock, was limited in some ways but had and still has a wide field. Today, it is found on the counters of department and 5 and 10c stores. Marbles, powder puffs, rubber bands, handkerchiefs, score pads and numerous other what-nots which require only the protection from handling and dust, are found in this, the first transparent bag.

The flat bag was soon agumented by the square bag, at first only of the non-moistureproof kind. The moistureproof cellulosic sheet further extended the

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field of visable packaging, but has its difficulties in sealing and strength where an appreciable weight is involved. Many means have been devised to combat these difficulties. Label manufacturers now have moistureproof labels, glue manufacturers have improved adhesives and last, but not least, comes the gummed cellulose tape.

The nut industry, the bakery and candy makers were looking for a bag to protect their wares from atmospheric conditions. In some cases it was to keep moisture out and in others to maintain the original moist condition of their product. Due to packing, handling and shipping, it was soon found that the double or duplex bag had a place with the other transparent bags. This bag, having an inner lining of moistureproof cellulose and an outer covering of normal material, had all the protective qualities of the latter, and the added strength and ease of sealing of the bag of the normal material.

The double or duplex bag was first found on the market in the form of the square bag. The shape of this bag, being better than the original flat bag for products such as nuts and candies, gained immediate popularity and is still an important container in the field of transparent bags.

During the growth of the transparent bag industry there was always one stumbling block, the necessarily high selling price. Many articles to be sold to the consumer for five and ten cents could not carry the burden of a bag costing between one cent and a cent and a half. The window bag came to the rescue here—a bag of paper or glassine with a strip of transparent cellulose in the front panel displaying the product. This window bag, manufactured in all types, answered all the requirements for noodles, some baked goods, and many items in the dry goods line where protection from handling and not protection from moisture is a major point. Being primarily a paper or glassine bag, the cost of the transparent cellulose being cut to nearly one-quarter of the amount of a full transparent single bag a market was easily established and new items appear daily in this type package.

Following this came a bag similar in some respects, but instead of being a paper bag with a transparent window, it was a moistureproof cellulose bag reinforced with paper or glassine, leaving a portion of the front panel open or clear to display its contents. Here we have a full moistureproof bag approaching a double bag in strength at a price approximating that of a single transparent bag. The uses for a bag of this type are those of the duplex and many others where the cost of packing prohibits the use of the more costly double bag. Nuts, candies, candied pop corn tea, coffee, tapioca, dried fruits and vegetables, rice and such are economically and efficiently merchandised using this bag as a means of packaging.

In some case fancy or colored papers have been used for the outer or reinforcing cover, giving a marginal strip on either side of the window with color to set off or harmonize with the product. The field of fancy paper, for both color and design, being practically limitless, the manufacturer of this type bag has but little trouble satisfying the desires of those wishing to follow a color scheme in their advertising and packaging.

One of the latest, if not the latest, along this line is the moisture proof bag partially covered with colored Cellophane or Sylphrap leaving the clear window in the front panel. The vivid colors and sheen of this covering adds an attraction in a display that is hard to equal in printed or fancy paper. Inasmuch as we can now get colored cellulose sheets in most any color from black to the delicate shades of blue, lavender, and pink, it is possible to match any item with this bag.

The transparent or window bag being principally a display bag has brought the art of printing more and more into the bag business. Printing on cellulose sheets or web, at first a difficult task, is now commonplace in both the bag and wrap. The window bag, either plain or moistureproof, having a back of paper or glassine, lends itself very aptly to printing. If desired, all printing can be done on the marginal band adjacent to the window, thus leaving the window unobstructed insofar as display is concerned. The back panel can then be used for advertising other items in the line or for directions or receipts for the use of the contents.

Some manufacturers using transparent bags have improved their package and cut their cost by the use of labels. This has been accomplished in some cases by using the labels for sealing the bag, and in others by mounting the label on the front panel and thus eliminating printing on the bag.

The folded tag over the top of the bag, fastened in place with an eyelet or metal fastener acts as a seal and space for carrying advertising. This type of sealing has found most favor where the item is to be sold from a rack. In this case, the eyelet used for sealing the package is used also for hanging on the rack hooks. Due to the fact that space on this tag is somewhat limited, a card carrying the same message in larger type can be placed or fastened to the top of the standard.

Methods of attracting the eye to a package are probably as numerous as the products to be packaged. Every day old items come out in new dresses, more in keeping, or a step ahead of new rivals. The transparent, or visible display bag, has played an ever increasing important role here.

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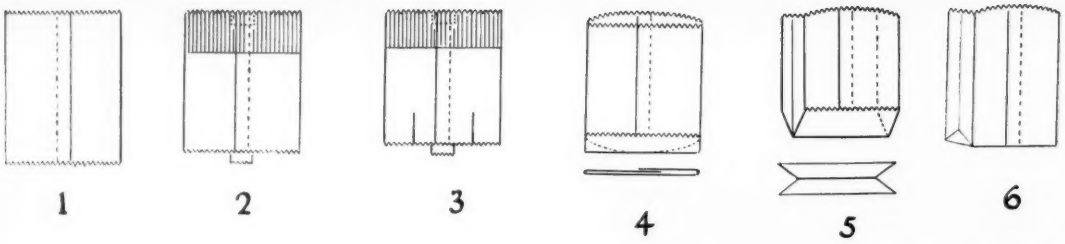
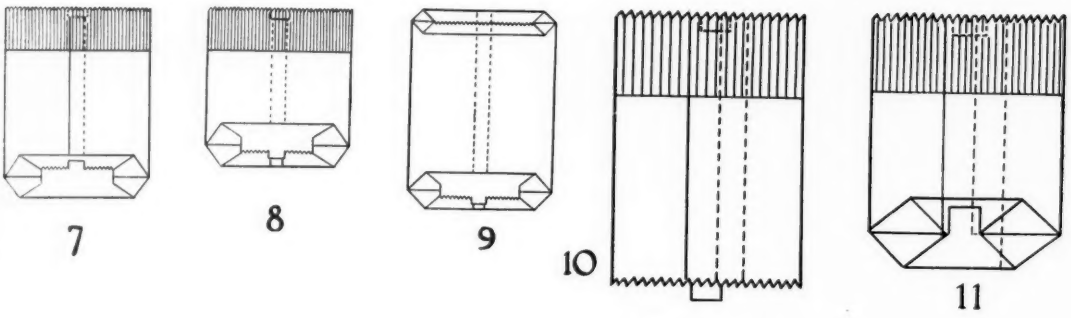
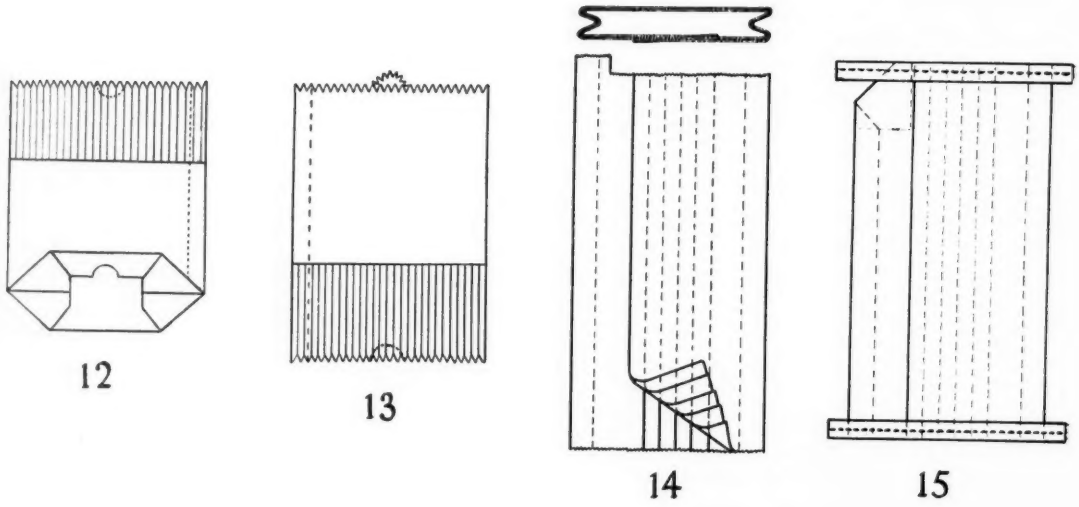
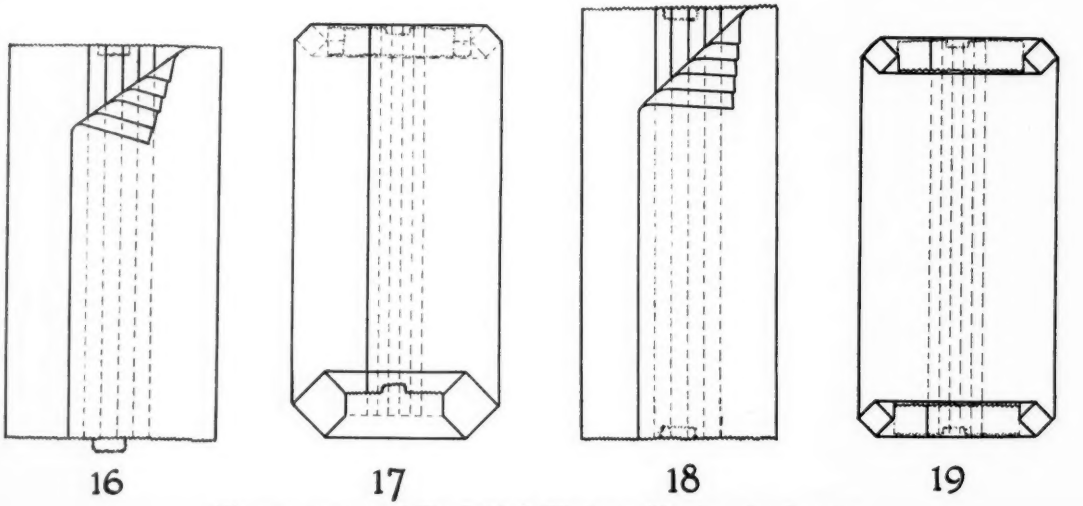
Styles of Bags









Diagrams, courtesy of The Smith & Winchester Manufacturing Company.

Styles of Bags

Fig. 1. Plain tube, no thumb hole, no crimping, no slitting, with the seam placed in the center on top of the tube.

Fig. 2. Plain tube with thumb hole, crimping, no slitting, seam in center on top of tube.

Fig. 3. Plain tube with thumb hole, crimping and slitting with seam in center on top of tube, principally used only for hand folding a satchel bottom.

Fig. 4. Flat bag with straight, plain bottom, wide thumb lip and seam in center of tube. Bottom seam up.

Fig. 5. Square bag with intucked sides, wide thumb lip, seam in center with bottom and seam up. Bag half opened.

Fig. 6. Square bag opened with bottom formed.

Fig. 7. Bag with standard satchel bottom, made on tuber and bottomer. Has thumb hole, crimping, and seam in center of tube. Bottom and seam on top of tube.

Fig. 8. Bag with standard satchel bottom. Tube and bottom are produced on one machine and in one operation. Has thumb hole, crimping, and seam in center of tube. Bottom up, but seam on bottom side of tube.

Fig. 9. Bates valve bag with both bottoms up, but seam on bottom side of tube. Standard bottom on one end, narrow valve bottom on other end.

Fig. 10. Plain duplex tube with thumb hole, mouth of tube crimped, with seam up and in center of tube.

Fig. 11. Complete duplex bag with a combination satchel bottom. Thumb hole, crimped at mouth, with seam up and in center of bag.

Fig. 12. Standard satchel bottom bag with side seam on top and right of bag, shows crimping, also thumb hole and bottom on top side of bag.

Fig. 13. Plain tube with side seam.

Fig. 14. Five wall tube for the sewed end valve bag, having the valve lip and intuck sides.

Fig. 15. Finished multiwall sewed valve bag.

Fig. 16. Multiwall tube with thumb hole and thumb lip for use with bottomers to make open mouth bags with a satchel bottom or a valve bag as shown in Fig. 17 with standard bottom on one end and narrow valve bottom on the other end.

Fig. 18. Type of tube for making a valve bag having both bottoms the same size as in Fig. 19. In order to do this there must be a thumb hole in each end of the tube, this is accomplished by a special attachment to the tuber.

Textile Bags

THE TERM "textile bags," as the name implies, refers to bags made from textile or woven cloth of one kind or another and is used to distinguish such bags from bags made of paper. Textile bags may be made from any kind of woven material, although practically all are made from cotton or burlap goods.

Textile bags are peculiarly appropriate for packaging certain commodities, just as bottles, collapsible metal tubes, cans and cartons have fields they are particularly fitted by their nature to serve. Textile bags are particularly adapted for use as containers for powder and granular products, such as flour, sugar, table salt, ice cream salt, soap chips and powder, and various chemicals. They are also used to advantage in packing vegetables such as beans, rice, potatoes and onions.

The use of cotton and burlap bags for packing potatoes for retail sales has increased tremendously during the past two or three years. Potatoes were formerly received by the grocer in bulk in burlap sacks. He sold them to his customers in paper bags by the peck or pound. The methods used today to an increasing extent is the packing of 15 to 25 lbs. of selected potatoes in small cotton or burlap bags. Potatoes so packed not only bring a premium but also enable the groceryman to wait on his trade more quickly.

Advertising value: Brands, trade marks, and other advertising matter may be printed on textile bags in various bright colors in a similar manner as is done on other types of containers. Art departments are maintained by large and more progressive textile bag manufacturers where brands are designed without charge to the customer. Poster effects are most striking on textile bags and with the various contrasting colors available in up-to-date bag designing and printing, attractive effects are obtained.

Textile bags light in weight, yet strong: Textile bags are light in weight compared with most containers, and this means a saving in tare weight on every shipment, thus effecting a permanent saving in freight charges. In spite of the light weight they are amply strong to carry the contents safely to their ultimate destination. They stand the strain under the usual shipping conditions encountered. They do not break or fall to pieces if by chance they fall or are dropped. Research departments are maintained by textile bag manufacturers where tests are constantly being made to determine the suitability of different types of bags for carrying various commodities. Bags are designed for the particular purpose for which they are to be used, and tests are made that simulate actual conditions of use.

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Textile bags flexible: Due to the soft cloth from which bags are made they are flexible and adapt their shape to the place in which they are stored. They pack together compactly, saving valuable storage space. The maximum amount of goods may be stored in the minimum amount of space. Empty bags require little storage space as they are bundled in compressed bales. The flexibility of bags makes them easy to handle and they are preferred by shippers and carriers for this reason. Textile bags are flexible in another sense in that they can be made any size desired. Individual shapes and varying sizes, without number, are available.

Textile bags have utility after being emptied: Cotton bags when used as containers for retail packages appeal to housewives, as the sturdy piece of white cotton cloth of which the bags are made may be used as a dish towel, dust cloth, or vegetable bag. Burlap bags always have a good salvage value, as they can be used again for packing commodities of low cost not requiring new containers.

Bag Sealing

Such products as ore, cement, lime, cereals, coffee, drugs and a host of other products are being successfully shipped throughout the country in paper bags.

The paper bags are made in many different ways:

1. The multi-wall bag.
2. The lined bag.
3. The valve bag.
4. The glassine bag

and a number of others.

They are sealed either by tying with twine, heavy cord or wire loops; by sewing with special stitching machines, by folding and taping, by lapping and gluing or by folding and stapling with wire staples.

Machines are made that will automatically fill the bag and then close it under some one of the above-mentioned methods.

It is advisable, when using bags, to be careful to see that the product packed in them is not affected by any chemical ingredient of the paper.

If an airtight package is desired, either the taping gluing or stapling method can be used advantageously. To produce a sift-proof closure, proper folding and stapling appears to be the only known practical method.

Seamless Transparent Containers

The development of seamless transparent containers has made considerable progress in recent months. This type of package, while still somewhat confined in its commercial applications, is becoming popular because of its many interesting advantages. Containers of this type are available as vials, bottles, jar and collapsible tubes. Among their many advantages are their light weight, pleasing appearance when used in colors, and their total absence from breakage. As transparent containers, they supplement glass most advantageously. They are produced from either a cellulose nitrate or cellulose acetate base, depending on the field to be served.

These cellulose containers can be decorated to the same extent as is possible with collapsible metal tubes. Printing on transparent vials, bottles and jars offers a novel and attractive substitute for paper labels.

Many applications are now being made of such containers in their many forms. Millions are used each year for the packaging of mercurial ointments, creams, pastes and ungents. Feminine hygiene dispensers of this material are used in large quantities. Other prominent uses include, styptic pencils, dental floss, tooth brushes, pencil leads, pen points and pills and tablets of all kinds. Where extreme accuracy of dimension is required, these containers can be held to close dimensional limits.

It is obvious that seamless cellulose containers will never entirely replace glass but additional applications are constantly being developed for them as they hold a definite place in the packaging field.

Collapsible Metal Tubes

By FREDERIC REMINGTON

Peerless Tube Company

A CLASSIFICATION of collapsible metal tubes may be summarized as follows:

1. Pure tin tubes, made of new virgin tin, alloyed with a small amount of copper or other suitable stiffener, in minute quantities. No adulterant such as lead or other soft metals is used in these tubes and they are essentially for use for any product going on or in the human body. Under normal economic levels tin tubes are the most expensive, but recently the metal markets have been at the lowest ebb since 1900 or before. Tin tubes are as cheap as other competitive metals.

2. Aluminum tubes, admirably adapted for uses similar to tin, with the additional advantage of extreme light weight. A slightly stiffer tube than tin and normally competitive or a trifle cheaper than tin

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except under existing low tin markets. Aluminum tubes require some research in the adaption to certain products, particularly those containing alkalies, but in general they cover the same field as tin tubes.

3. Lead tubes, known as lead alloy tubes, made of pure lead with antimony or tin and antimony, and chiefly used for adhesives, shoe creams, rubber cements and articles where the contents will not be used on the human body.

4. Tin-coated tubes, having a lead alloy base with an even distribution of a thin coating of tin on the inside and the outside, made in such a manner that the two metals cannot be separated. These are the heaviest weight tubes and seem to be declining in volume steadily in the collapsible tube field to the substitution of the other three types, as their scrap value is exceptionally low to the tube manufacturer and the final appearance is not as good as the pure tin or aluminum.

Standards of manufacture and tolerances are being held to closer limits than ever before by the manufacturers, and quality is the outstanding watchword in the entire industry today. With increasing facilities for prompt delivery, the purchasers of collapsible tubes are more than ever assured of prompt service of a high quality package.

Almost any type of decoration can be placed on a collapsible tube and the reproduction of accurate color effects can be held in large quantity runs, and basically this work can be done up to four colors and with ten or eleven shades resultant from screen work if desired. Great strides have been made in the development of resistance for protection against alkalies and other materials which might attack the enamel on the tube and more striking colors are being used in the modernization of tube designs by most of the larger accounts.

Developments of the past two years indicate increasing favor of the so-called clipless closures and many replacement filling machines have been sold. These devices are eliminating the use of metal clips and frequently a colored band is lithographed on the bottom of the tube by the tube manufacturer, which results in a colored clip effect.

Modernizing of the tube business still continues, with new equipment cutting down the time of production for collapsible tubes and corespondingly smaller inventories on the part of the purchaser. In addition to this many packages have been redesigned and old, familiar tube designs have been dropped with complete modernization and new types of lithography taking their place. New shapes of necks and caps have also appeared and a further growth of molded caps in colors is indicated.

Tube finishes are more durable than ever with an increasing use of synthetic resinous gums in the preparation of the original enamel which coats the tube and stronger lithographing inks have been developed and whenever the protection of a coating is needed the increasing trend is noted of pyroxalin lacquers, the gloss of which has been greatly improved in the past year and the resistance to alkalies increased.

It is particularly interesting to note the simplicity of the newer tube designs and the elimination of endless amounts of reading matter which formerly appeared in the directions panel of collapsible tubes. This is proof that the manufacturers of tubed products are convinced that the public seldom takes the pains to analyze the directions matter printed on tubes or cartons, but the shorter and more pertinent directions and reading matter are more easily and quickly read and are far more effective than the complicated instructions which are seldom followed.

Many of the new tubes designed in the last three years are without any directions as these have been incorporated in the design and the entire effectiveness being brought to the fore of the design itself. New design trend shows grouping of an entire family of tubed products with the same basic design and the use of special insert plates changing the name of the product itself with perhaps a change of symbol for further identification. This has been particularly brought to the foreground in the paint industry where hundreds of different colors are designated under family groups with separate insert names for each different color.

New food products show increased sales in collapsible tubes and are slowly but surely making a sound contention for the use of collapsible metal tubes in this field; and if sales statistics could only be published of such products in tubes, unquestionably the American trend would be as great as the European, where today a wide range of products are packed in collapsible tubes.

Particularly to new users, the previously published summaries should be added, that the average public is familiar with collapsible tubes and knows how to handle them; that they can be packed for traveling without danger or breakage or spilling the contents; that they are sanitary as not to permit fingers into the material itself—more than one person can use the tube and still retain the sanitary feature; that the unit cost should be less for filling and packaging as compared with other containers; that their steadily increasing production indicates growing favor.

Stapling of Packages and Displays

The use of the wire staple as applied to packages and package work today is unlimited. Staples are furnished in various sizes as to crown and leg length and they are used on all types of products.

One of the biggest things today is modern merchandising. No longer need an article be hidden from view, and wise merchants have found out that

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selling their product on display cards with the product firmly stapled to the display is the modern way. Small articles can now be fastened to cards and handled in the chain stores. Any manufacturers desirous of increasing their sales should investigate the possibilities for popularizing their products in these small-unit, large-scale markets by way of display cards. This is also the most effective way of helping dealers.

Specially constructed stapling machines make it easy for one to staple any type of product, due to the manufacture of many hundreds of different sizes of staples, and the cost of these stapling machines and staples is small. Staples are also being used by many manufacturers in the daily operations in their plants to eliminate expensive methods in vogue. Staples replace tacks, glue, sewing, etc.

Today there is a decided trend toward lighter materials in the fabrication of packages and cartons. Inexpensive hand and foot power machines, both for the assembling of telescope cartons, as well as the bottoms of cartons, are now available; so that manufacturers and shippers of all types can now buy their cartons in knocked-down form and assemble them as they desire, thus eliminating considerable expense and also minimizing the floor space required.

Synthetic Plastics in Packaging

By H. S. SPENCER

General Plastics, Inc.

THE PLACE that modern synthetic plastics occupy in packaging today is a large one, and these versatile materials have definitely established themselves as basic package materials along with paper, wood, glass, metal, etc. They should be used not necessarily as substitutes but as new materials, possessing new properties and possibilities.

Molded synthetic plastics comprise several groups of compounds with varied characteristics, differing in textures, translucency, depth of color, etc. To the layman, however, all look more or less alike, and are considered as a single group.

Plastic materials made by an increasing number of manufacturers in the compound field here and abroad may be classified in three general groups: phenol-formaldehyde plastics, urea-formaldehyde plastics, celluloid or cellulose acetate.

Phenolic Plastics

Phenolic plastic compounds are of chemical foundation and are molded or formed under heat and pressure, the manufacturers supplying material in a powdered form to those equipped to make it into the finished closure, jar or box by what is known as the hot press molding system. This work is done by organizations specializing in molding and known to the trade as custom molders. Up to the present time, no manufacturer using phenolic materials in packaging has attempted to do his own molding, which is a specialized undertaking requiring rather expensive equipment and technical experience.

The trend to phenolic plastics for various packaging items lately has been very pronounced. The public has always liked bottle caps and collapsible tube closures made of these materials, and therefore packers have found them advantageous at the point of sale, as well as extremely practical in the packing procedure. Molded cream jars, boxes, display stands, compacts, lipsticks, trays for manicure ensembles, etc., all have very definite advantages. Their wide adoption is also due to the beauty of the material itself, the permanent lustre of its surface, the elimination of finishing or polishing operations, the accurate threads and details obtainable, the wide range of colors and the non-brittle qualities of the material.

One of the outstanding advantages in connection with molded closures for collapsible tubes is that the closure does not leak nor do the contents cake or discolor in the mouth of the tube, thus throwing the often fatal strain on the tube's weak spot, the wall at the shoulder. Molded tube caps are often used without cork liners.

While manufacturers are alive to the appeal of color and the vogue of colors now reaching into every phase of merchandising, it is not color alone that prompts the use of the phenolic plastics.

Phenolic plastics are not affected by acids, alkalies and similar reactives. They do not rust or corrode in contact with certain pharmaceutical products nor do they discolor the contents of the container. In the form of caps they are easily gripped and screw down unusually tight and yet are always readily released. Their threading is stronger than the alloy metals and does not strip. They are light in weight, and have an advantage in carriage convenience and shipping cost over metal.

In group packaging phenolic plastics are particularly fitted for the permanent tray or box for refill purposes. They make excellent display stands, cream jars, vanity cases, powder containers and hundreds of different types of boxes. They make unusually attractive reuse containers, and manufacturers have adopted them for belts, garters, suspenders, etc., with an after-use for cigarette containers, ashtrays, etc.

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The material, because of its fine lustrous appearance, color and design possibilities, resistance to atmospheric conditions and ability to effect a tight seal, has been used widely for the highest grade cosmetics. Manufacturers of foods, candy, shoe dressing, have also found these materials valuable in the packaging of their products.

The design possibilities of phenolic plastics are unlimited and boxes of almost any design or shape, no matter how intricate, can be made, often at no additional expense.

Phenolic compounds permit manufacturers to have their own individual closure, bottle cap or container made, for the material lends itself to all types of design, imprinting and similar treatments, as any trademark or design engraved in the hardened steel molds reproduces faithfully on the molded piece.

The material has also been widely used for distinctive talcum box caps, sprinkler bottle tops, inside thread caps, and for applicator caps, etc.

Non-hygroscopic cream jars or light weight and design possibilities beyond those usually found in materials for this purpose have recently been offered by manufacturers of phenolic plastics. They cannot crack, swell or bind. These newer materials are offered in lighter and more delicate colors including pastels heretofore unobtainable.

Phenolic resinoids also include a group of transparent materials of limited adaptability and are supplied both as molding powders, solid blocks and rods which are machined or turned as in the manufacture of pen holds, pipe stems, etc. The materials of this phenolic group are manufactured by:

Bakelite Corporation under the trade name of Bakelite; General Plastics, Inc., under the trade name of Durez; Resinox Corporation under the trade name Resinox.

Urea—Formaldehyde Plastics

Materials of the urea group are sold in powdered and granular form and formed into finished pieces in steam jacketed steel molds under heat and pressure.

Urea formaldehyde plastics have a natural translucent texture and may be secured in delicate and unusual colors. The natural color of the material is a translucent ivory permitting easy pigmentation to obtain the desired shades. It has a slight flexibility, is non-inflammable, but can be discolored and blistered by hot cigarettes, burning matches, etc., as it will not withstand exposure to extreme heat. For instance, dishes made of this material must not be warmed in ovens but may be washed in hot water and used regularly for tea, coffee and hot foods.

Articles molded from urea plastics are extremely durable, which quality has been exploited in the production of Beetleware, a non-shatterable line of tableware in colors and millions of tumblers have been sold in gay colors, finding their ultimate use in millions of bathrooms.

Urea plastics are being used as containers in packaging and are suitable for rouge boxes, tube and bottle caps. They are odorless and tasteless and in the packaging of cosmetics, lotions and food products, no glass liner is necessary since there is no reaction of any kind between the cap or jar and the contents. New uses are being found for these materials in many divisions of packaging. The range of their adaptability in packaging problems is constantly being broadened. Manufacturers of these materials are:

Synthetic Plastics Co. Inc., makers of Beetle; Toledo Synthetic Products Co. Inc., makers of Plaskon; Unyte Corporation, makers of Unyte.

Cellulose Acetate

Cellulose acetate colloided with suitable plasticizers, pigments and solvents to insure a homogeneous, tough, plastic mass forms a molding material of great adaptability for colorful packages or containers. This unique molding material requires no special treatments such as a hardening bath, curing or subjection to high temperatures to complete condensation or polymerization reactions. Heat and pressure are required merely to mold the material into the desired shape. Waste is eliminated because scrap or flash is reworkable.

Cellulose acetate molding material offers an unlimited color range to the designers of containers. These can be molded of transparent, translucent or opaque materials. Beautiful mottle effects are also available. The imitation of marble, onyx, jade and other valuable materials is so close that only an expert can detect the difference.

Containers or packages molded of cellulose acetate molding compounds are practicaly non-inflammable, are tough, resilient and resist breakage, are light in weight, uniform, tasteless, odorless, sanitary, non-corrosive, non-injurious and do not deteriorate or fade with age.

The most prominent manufacturers of the cellulose acetate group are Eastman Kodak Co., Celluloid Corporation and Du Pont Viscoloid Company.

Secondary Seal Caps

There are two distinct types of secondary seal caps on the market: one is a cellulose cap and the other is made of gelatin. Both are similar in appearance after they are applied on the bottles, the main difference between the two being that cellulose caps are furnished to the user in a wet condition and have to be preserved when the container in which they are shipped is opened, whereas gelatin caps are

sent to the consumer in dry form. To be applied they must be soaked in water for a period of 20 to 30 minutes before using.

Both types are applied moist over the neck and stopper of a bottle. They shrink rapidly and, as they dry, seal the bottle securely against evaporation, leakage and tampering. These caps are manufactured in a wide range of colors, both transparent and opaque, so that pleasing, colorful finishes can be given the product, that will properly blend with the labels.

While such caps can be easily removed they cannot be replaced. With the seal intact the purchaser is assured the bottle has not been tampered with—an unbroken cap is a guarantee that the product is exactly as it left the manufacturer's plant. They are applied by hand. An experienced operator can easily apply 800 or more per hour.

On the recent designs of bottles with molded caps, where the molded cap reaches to the shoulder of the bottle, the cellulose or gelatin cap is applied direct to the threads of the bottle under the molded cap. This is especially advantageous when the contents of the bottle contains a high percentage of alcohol, ether or oils, as the caps are impervious to alcohol, ether or oils.

On molded closure bottles having a short neck, caps can either be applied to the thread of the bottle or over the bakelite cap. Or they can be obtained in the form of bands or short tubes, thus leaving the top of the molded closure uncovered. Cellulose bands in gold and silver are also used to decorate the top of ginger ale bottles. They are of a special advantage to bottlers who take back their bottles as the bands are easily removed without the necessity of hand scraping.

Glass Containers

By E. G. ACKERMAN

Glass Container Association

THE GLASS container has for many years been recognized as the ideal container for drugs, pharmaceuticals, beverages, milks and certain foods such as catsups, vinegars and table sauces. More recently it has come into general use for the packing of all types of food products. This is no doubt at least partially due to the housewife's acceptance of glass for the home pack. With the entrance of automatic machinery into the glass industry it has also been possible to reduce the cost of glass containers so that they are now comparable with other types of packages in price, besides offering other inherent advantages.

The style and design feature of a glass container has also made it a desirable package in that it is possible to give the packer a distinctive package, and one which he can advertise and merchandise by its distinctiveness and eye appeal. In addition to the variety of shapes and designs, glass containers are also commonly made in different colors. These include flint (clear white), amber, blue, light green, emerald green, black and opalescent.

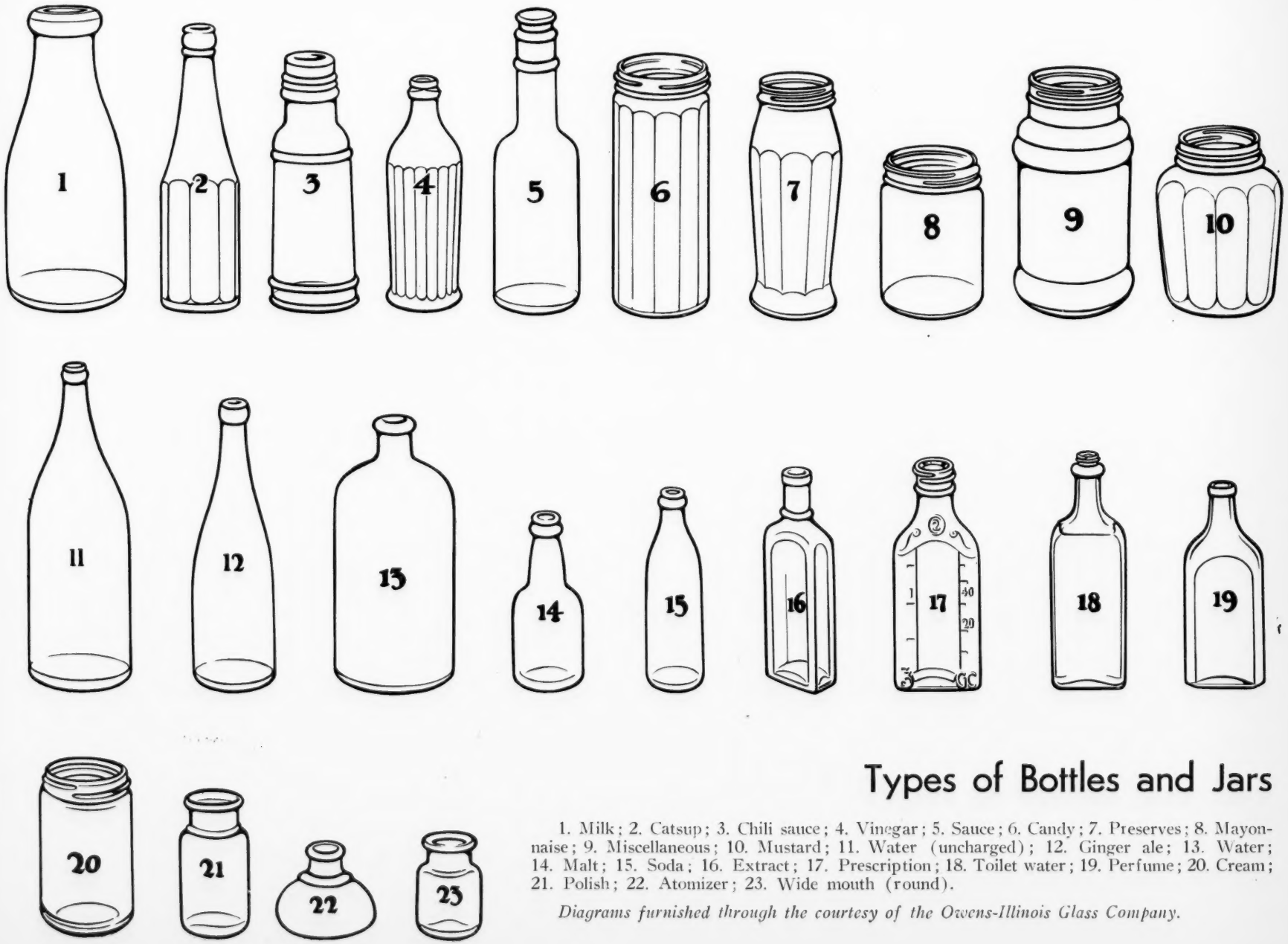
There are some disadvantages to the use of automatic machinery. First, new molds for constantly changing designs add materially to the cost, and second, it becomes increasingly necessary to have long runs on any one type of bottle. Where the production of hand shop used to run from 2,000 to 3,000 bottles per day, the present automatic production runs from 15,000 bottles per day on the large sizes, to 215,000 on the small and medium sizes.

Special types of bottles have been developed for each division of the packing industry. These are known by the manufacturers and the trade under four broad divisions, and then further classified into many smaller divisions. These classifications are given below:

Types and Purposes

1. Food.
   - (*a*) Milk bottles: For milk and cream.
   - (*b*) Narrow neck blown bottles: For catsups, chili sauces, table sauces, vinegars, salad dressings, syrups, condiments, spices, salad oils, oyster cocktails, etc.
   - (*c*) Wide mouth blown bottles: For jams, preserves, mustards, candy jars, cherry bottles, olive bottles, pickle bottles, crushed fruit jars, horseradish bottles, mayonnaise jars, vegetable jars, meat jars, salt and pepper shakers (when sold to packers), etc.
   - (*d*) Pressed ware, tumblers: Used largely for jelly, peanut butter, marmalade and some meat products.
2. Beverage Containers.
   - (*a*) For carbonated beverages, such as sodas, ginger ales, malt extracts, cereal and malt beverages.
   - (*b*) For non-carbonated beverages such as fruit juices and still water.
3. Medicinal and Toilet Preparation Containers. (Both pressed and blown.)

For all medicine bottles, druggists' prescription ware, bottles for pharmaceutical preparations and manufacturing chemists, toilet preparations, cos-



Types of Bottles and Jars

1. Milk; 2. Catsup; 3. Chili sauce; 4. Vinegar; 5. Sauce; 6. Candy; 7. Preserves; 8. Mayonnaise; 9. Miscellaneous; 10. Mustard; 11. Water (uncharged); 12. Ginger ale; 13. Water; 14. Malt; 15. Soda; 16. Extract; 17. Prescription; 18. Toilet water; 19. Perfume; 20. Cream; 21. Polish; 22. Atomizer; 23. Wide mouth (round).

Diagrams furnished through the courtesy of the Owens-Illinois Glass Company.

metics, nursing bottles, sterilizers, peroxides, citrates, hair tonics, pomades, atomizers, liniments, cold creams vaselines, face creams, lotions, talcum powders, castor oils, flavoring extracts, liquor ware, perfume and toilet-water bottles and tooth-brush containers.

4. General Purpose Containers.

For acids, cleaning fluids, polishes, paints, shellacs, varnishes and stains, ammonias, inks, mucilages, battery jars, soap globes, oil dispensing bottles, reservoirs for oil stoves, floats, fire extinguishers and other special items.

Advantages of Glass

The glass container possesses many marketing advantages from the standpoint of the packer and bottler. A few of these advantages are listed below. Their sequence of importance depends upon the product.

1. The glass container is the most sanitary container. Dirt or any foreign substance in the product can be readily detected through such container.

2. The glass container places delicate foods and drinks in the consumer's hands free from all foreign tastes and flavors.

3. The development of automatic machinery makes it easy to pack a product in glass.

4. Transparent containers guarantee 100 per cent inspection, thus establishing market and public confidence.

5. In revealing everything as it is, the glass container gives the packer full credit for his use of high-class raw materials and superior packing methods.

6. The glass container helps sell its contents; it is the "silent salesman."

7. The packer is protected in that if there are any imperfections in the product or mistakes in labeling, they can be detected while in his hands.

8. Since color is a potent selling factor, the transparent glass container packed with a colorful product offers unusual opportunities for the use of attractive, harmonious and sales-pulling labels.

9. The glass container has the best psychological background. From the nursing bottle through childhood to old age, glass stands for purity and sanitation in everybody's mind.

10. The housewife is already sold to the idea of glass for home preserving. Thus, she is a ready prospect for goods marketed in glass.

11. The demand for greater variety of products in glass is rapidly increasing.

12. The glass container lends itself to individuality in size and shape; hence, it is adaptable to many products.

13. Modern glass containers possess great tensile strength, withstand the heavy shocks incident to shipping and handling, and can be subjected to very high temperatures in processing (cooking).

14. The manufacturers of glass containers and closures are glad to cooperate with the packer. They are squarely behind their product and their customers.

The Glass Container Association of America, 19 West Forty-fourth St., New York City, is at the service of packers and bottlers requesting information upon glass containers, closures, machinery and equipment and specific packing and bottling problems.

Liners for Caps

TO A CONSIDERABLE EXTENT, closure efficiency depends upon the liner. It is the liner that comes in contact with the product and makes the actual seal with the glass. A liner usually is composed of two parts: the liner surface that touches the product, and the liner backing that provides resiliency and resistance. The selection of each should receive consideration as to the function to be performed.

The surface material must be carefully specified to withstand any possible chemical action or deterioration from the properties inherent in the product. It must be selected according to product characteristics.

The function of the liner backing is practically the same with all products. It, too, must be carefully specified with due regard to a number of factors. Among these are flexibility, softness, uniformity, economy, and the ease with which the material may be worked.

From the standpoint of assisting the spring seal action of the cap itself, in making an airtight, leakproof seal the liner backing must have the correct amount of firmness or compressibility, as well as the greatest possible resiliency. The material should not be too easily compressed or too soft, because a certain degree of firmness is essential in order that the seal does not loosen nor the edge of the glass compact it too far. On the other hand, it should not be too hard, but pliable enough to fill in the shallow waves or irregularities that may be present in the sealing surface of the glass.

The highest degree of resiliency is desirable so that there will be a constant tendency of the backing material to resume its former thickness (before being compressed), thus insuring that, after the cap is applied, the seal will remain tight and secure.

When the use of liners was confined to crown caps, for which they were originally devised, the

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problem was not a trying one. It was answered satisfactorily by disks of natural cork or of cork compositions that would hold the comparatively simple and chemically inert carbonated or low alcoholic beverages which were sealed with crowns. However, with the development of screw caps and other types of mechanical closures, the liner problem became more complex.

Many materials have been developed for the purpose, but still there remains the question of determining which particular one to use for a specific product. Logically enough, the cap manufacturer has shouldered the job of answering this question for those who contemplate using his caps. The packer can and should by all means submit sample packages of his product and a chemical analysis of it to the cap manufacturer for laboratory tests to find out the kind of liner it requires.

Cork compositions produced by granulating high-quality corkwood, introducing a binder, and compressing into blocks from which sheets or ribbons are cut, are widely used as lining materials. Disks of natural cork are also used to some extent but due to the limited supply of corkwood that is largely free from pores and other defects, its use is restricted. Compositions serve equally well except in that the introduction of a binder and the presence of interstices in the surface make them susceptible to chemical reaction in some cases. Various binders that are inert to certain chemicals are used to overcome this, and this factor marks the first differentiation between cork composition liners.

In addition, it has been found advantageous in some cases to treat the cork composition with paraffine or other waxy materials. Such treatment often makes a plain cork liner satisfactory. However, these treatments should always be used with caution for it must be remembered that there are many liquids with which they should not be used.

A great variety of liners is produced by applying a facing material over the cork composition. This operation is ordinarily referred to as "duplexing." The cork gives the liners the necessary thickness, strength and resilient compressibility, while the facing, which is presented to the contents of the package, resists chemical action. The facing materials used are varnished papers, paraffined papers, tin foil, aluminum foil and lead foil, in addition to foil backed with paper.

Varnished papers, which are probably the most widely used of all liner facing materials, have been appropriated and developed from the electrical insulation business. They have different chemical characteristics depending on the formula used in making the varnish. Two pieces may be identical in appearance and yet vary greatly in performance. Careful tests of varnished papers must be conducted before selecting a specific kind of quality for a product. Sometimes varnished papers are coated with paraffine in order to lubricate the surface and prevent tearing, due to roughness of the bottle, when the cap is screwed on. This safeguard cannot be used if the liners are to seal products which dissolve the paraffine. Paraffined plain white paper as a duplexing material sometimes proves satisfactory with creams and pastes. Ordinarily, however, this paper cannot be used with liquids.

Tin foil-faced cork composition has a large field of usefulness as a lining material due to the fact that it withstands contact with a wide range of chemicals. However, it also has definite limitations and is more expensive than varnished paper. To give tin foil added strength and a better appearance, a lining material has been developed in which very thin foil is backed with a reinforcement of paper. In some instances aluminum foil and lead foil are also used.

Pulpboard is still another such material which may be had in the various facing combinations mentioned. Rubber is also used for liners. Its principal use is in sealing strong alkaline solutions which attack the more common lining materials. Special rubber liners for hypochlorite and other preparations have been developed and there are special compositions for organic solvents.

Package Tying Machines

Several new types of automatic and semi-automatic tying machines have recently been placed on the market. The new principle embodies a manual cross tie operation while the package is still in the machine. The machine stops at the half-way mark, permitting the operator to turn the package 90 deg. to the cross-tie position. A greater range of sizes can be tied with the cross-tie using this principle than with the old method, and greater speed can be obtained. There is an added tightness also, as but one knot is tied. These manual cross-tie machines come in double, triple, and quadruple wrap, and will handle all sizes of cotton twine, including cable cord. Three different ties can be made with any one of these machines—as, for example, the double wrap laundry machine. A cross tie can be selected on a medium or small bundle; a double wrap one way on a large, heavy bundle, giving a strong tie; or a single string on a very light package. No time is lost in selecting the proper tie.

Another new development is the transparent cellulose bag tying machine. This machine makes a double or triple wrap of colored or rayon twine around the neck of a bag, and the typical long loop bow-knot sets off the appearance of the tied bag. This tie also hermetically seals the bag. Great speed is the feature of this machine.

There is now available a full line of tying machines to handle any and all packages or bundles, no matter what the size or weight.

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Glass Finishes for Closures

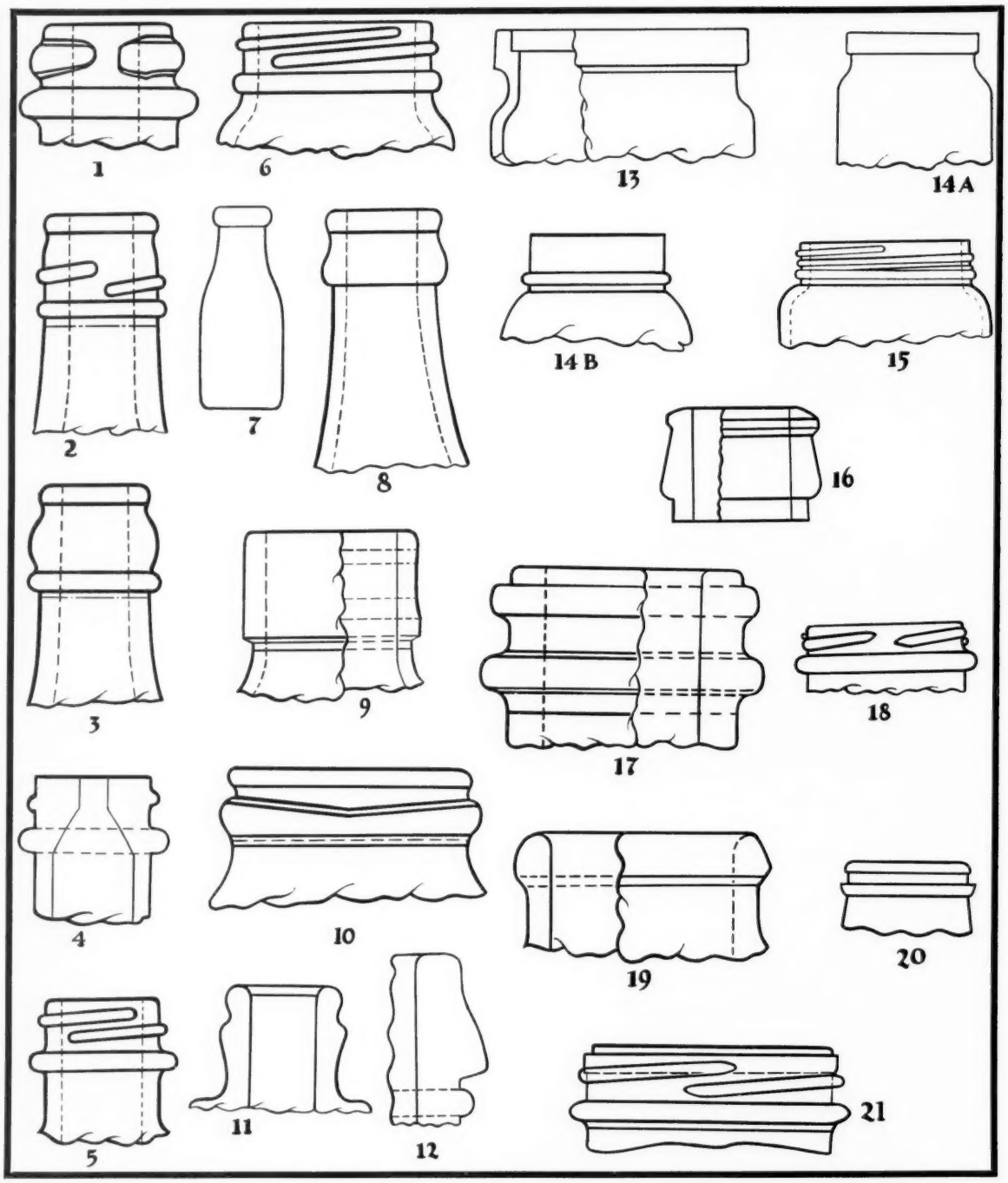

Fig. 1. Two lug Amerseal; Fig. 2. Combination Goldy, Crown, Handicap and screw cap; Fig. 3. Combination Goldy, Crown, Handicap and friction cap; Fig. 4. All glass sprinkler top; Fig. 5. Shallow continuous thread; Fig. 6. Deep continuous screw thread; Fig. 7. Milk bottle; Fig. 8. Crown beverage; Fig. 9. Save-a-seal (Patented); Fig. 10. Variable ledge "Priof"; Fig. 11. Kork-N-Seal; Fig. 12. Four lobe duplex seal; Fig 13. Phoenix band cap; Figs. 14-A and 14-B. Anchor or friction; Fig. 15. "R. O."; Fig 16. Goldy; Fig. 17. Super-crown; Fig. 18. Four lug reseal; Fig. 19. Upress-it; Fig. 20. Straight ledge pry-off; Fig. 21. Everseal.

Diagrams furnished through the courtesy of the Glass Container Association of America.

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Closures

By A. J. STERLING

FROM THE EARLIEST DAYS of mankind the problem of sealing all classes of containers has been a vexatious question. The primitive urns, crocks and other vessels were sealed with covers of pottery, wood, skin and other crude methods, often topped with waxes of various kinds.

The first great advancement came with the discovery of cork, and this rapidly became universal in use. It served its prime purpose well and kept the contents of the container from leaking. Of course, glass became the first container with which the manufacturer had to contend and latter on tin cans brought him further problems.

Glass, with its sanitary qualities, transparency and pleasing effects, took its natural leadership in a great many lines, but probably even today only about 30 per cent of those products which could be glass-packed are shipped in glass. This is due to the fact that up to the present time the glass container, plus the seal, plus the label, has not been considered as integral a whole as the tin can.

An ordinary cork, when pushed all the way into the neck of a glass container, needs a corkscrew to get it out, and this often destroys its effectiveness as a re-seal. Although corks form a very tight seal, they are hardly ever absolutely airtight. Space forbids going into details about corks or all the other seals that have since been discovered, most of which are now in use. Suffice it to say that it behooves us all to carefully study, test and compare the seals and methods before adopting any, remembering that the molding material, cork, metal, lacquer, liners, glassware and product to be sealed must all be taken into consideration.

The following list of closures probably are the most prominent:

SINGLE SEAL CLOSURES

American Can and Hazel-Atlas ... An aluminum cap with two ears for tear-off purposes.

Anchor ..... A vacuum cap used in food industry for wide-mouth ware.

Band cap..... A cap used in the food industry and applied by crimping.

Crown ..... Various types. Used in the soda water, food products and brewing industries.

Goldy ..... Generally used in the catsup industry and has tear-off feature. Aluminum.

Hazel-Atlas ..... Aluminum and tin. A vacuum cap.

Phoenix ..... A two-piece cap for foods.

White ..... A vacuum cap for wide mouth ware.

RE-SEAL CLOSURES

(Closures that can prevent contents from spilling when held in any position)

American Can and similar types using interrupted threads.

Anchor A Clipper. Friction cap.

Anchor R Clipper. Friction cap.

Anchor Amerseal.. One- and two-piece. A quarter-turn cap sealed by means of interrupted thread.

Brass cap with lugs ..... These are either friction or quarter-turn caps.

Closure service.... A band cap.

Corks ..... Rubber, natural, glass and cork, round glass stopper, paper discs.

C. T..... Aluminum, phenol resinoid, tin, glass, brass or zinc. This is the regular screw cap.

Darling ..... Adaptation of crown with re-seal feature by means of wire lever.

Duplex ..... A quarter-turn cap, sealed under downward pressure.

Friction caps..... Especially designed for use on catsup and chili sauce bottles.

Owens ..... Snap on. A friction cap.

Paragon ..... Two-piece screw and snap cap for catsup and chili sauce.

Roll On..... An aluminum screw cap, whose threads are formed on the container.

Spring stopper.... Made of glass, phenol resinoid, etc., with internal C. T. features.

Sterling ..... A cap for narrow or wide mouth-ware, sealed under pressure of vacuum.

Upress-it ..... Sealed by means of side pressure and opened by means of downward pressure.

Williams Kork-N-Seal ..... A cap sealed under downward pressure.

MISCELLANEOUS

Double shell screw caps ..... Here an outer shell with straight

side, giving appearance of plastic caps. Inner shell of regular screw caps.

Gel cap..... Same idea as viscose.

Plastic caps..... Made of various plastic materials in C. T. formation.

Sprinkler tops.... With or without spun-on features and allowing use by means of shaking.

Tin foil hoods.... These are commonly used on alcoholic products and put over corks.

Viscose ..... These are cellulose or gelatine caps, usually put over another closure to insure no tampering and give extra airtight property.

SINGLE AND RESEAL CLOSURES

(Used on tin containers only)

Barrol spout and cap ..... These are screw closures with non-drip spout effect.

Friction top..... With or without inner seal. These are the ordinary pushed-in friction cover.

Lock-Tite slip cover ..... These are a particular type, insuring absolutely tight seal.

Newman ..... With or without inner seal. These are generally used on varnishes, olive oil, etc., and are spun on.

One-draw slip cover ..... Various types such as coffee cans, etc.

One-piece single seal ..... Reamed-on or clamped-on seal.

Tite-N-Rite ..... With or without inner seal. These have a hinged cover which can be used after opening as a reseal.

Various adaptations of the C. T. cap with anti-refill or theft features.

These classifications are of necessity brief—nor do we wish to do more than to impart the information that manufacturers of products are more and more becoming convinced that a container is not merely the glass bottle or the tin can or the shape or design of either. It is now generally understood that a container means the vessel, plus the closure, and the closure consists of the metal, its formation and the liner or sealing gasket—for without these there can be no closure.

These liners are composed of a variety of substances, as, for instance: Plain cork, composition cork treated in various ways, paper impregnated with different products, rubber, cork with paper, tinfoil, lead, zinc, aluminum, etc., facings, felt, pulpboard, and a host of other products which are decided upon by chemists for the particular product to be sealed. The subject of liners is covered more completely on page 70 of this book under the heading "Liners for Caps."

These elements, properly selected, form the container, and together they enter into the successful sale and marketing of the product.

Decorative Metal Closures

Decorative metal caps for jars are obtainable in a wide variety of styles and finishes. Among the former are double shell, single shell with lugs, single shell with threads, etc. The range of finishes which offer a harmony of colors or a contrast of shades are as follows: Satin finishes—soft gold and silver effects; polished finishes—gold, silver or mottled effects; glossy enamels—all shades to harmonize or contrast with jar or label; contrasting finishes—colored tops with brilliant metallic sides; mottled finishes—with design incorporated in the metal.

Practical sealing features are obtained most satisfactorily with a concealed continuous thread although where air-tight sealing is not necessary a lugged cap is sometimes used.

Glass Package Labels

THE USE OF GLASS CONTAINERS in the packaging of food products in many ways simplifies the problem of label design. At the same time, if glass package labels are to be most effective, it is necessary that a consideration be given to a number of factors which are encountered with glass but not with other types of containers.

Usually one of the functions of the label is to make the container seem well suited to the product, though in fact the container itself may be one which is used for products of widely varied natures. Since glass can be molded or blown into many shapes and sizes, it is possible to design and produce a container especially suited to a product that will in time identify the contents. Some of the containers which are firmly established in the public mind as suitable and convenient for the products with which they are used are catsup and chili sauce bottles, preserve, pickle and mayonnaise jars and jelly and peanut butter tumblers.

In the design of labels used for glass food containers, the first questions to be considered is that of

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size. With most opaque containers a label as large as the package itself must be used. Obviously so large a label would not be required with a glass container nor would it be desirable, since in choosing glass as a container for food products one of the main objectives is to make it possible for the consumer to see what she is buying. Relatively speaking, therefore, the glass food container label should be of a small size and it should be so designed that the consumer can see the product when looking directly at the front of the package with the label in place.

Thus the question arises as to how a small label can be used to best advantage. There are a number of possibilities along this line which as yet have only been partly realized by packers in glass and which for emphasis can be listed and discussed. They are:

1. Legibility
2. Shape
3. Background
4. Color Combinations
5. Packer's or Brand Name
6. Name of Product
7. Trade Mark
8. Poster Treatment
9. Artistic Design
10. Standardization

The second problem presented by glass package labels is that covering instructions as to how the product should be used or suggestions as to the variety of ways in which the product may be used. Obviously, instructions or suggestions of this nature cannot be carried by the package label itself, for that must be kept simple in every respect and used almost exclusively as a mark of identification to aid the consumer in selecting the packer's product. There are two methods, however, which may be used to overcome the limitation of the package label proper in this respect. The first is the use of a second label or "outsert," and the second that of lithographed caps or closures.

If the second label is used it should conform to the package label insofar as the color combination used is concerned. Otherwise it should be as plain and practical as possible. In most cases an upright oblong label placed on the back of the container will best serve the purpose. The instructions for use should be made as simple and clear as possible, for it must be remembered that the consumer in buying package merchandise is buying for immediate use and trying to avoid as much as she can the work involved in the home preparation of food.

Likewise, if the second label, or "outsert," is used to suggest new ways in which the product may be used, it is desirable to hold to those uses which are quick and convenient rather than to list others which are complicated.

Lithographed caps or closures can be used for the same purposes as the second label and packers are beginning to see the desirability of this practice. In the first place, the lithographed cap lends distinction to his package and at the same time eliminates the cost of extra labels and likewise the cost of applying them. However, regardless of whether use instructions or suggestions are considered necessary and desirable, the lithographed cap or closure is coming more and more into favor.

In the case of lithographed caps, it is possible to carry standardization even further than in the case of labels. It is generally found desirable to adopt a uniform design and color combination for all caps, for when this is done the cap can be used with any product and thus it is unnecessary to stock a large number of caps with a variety of lithographed designs to match each product packed. The same predominant color should be used on the caps as is used on the labels. However, it is frequently possible to produce lithographed caps which will harmonize perfectly with labels without using as many colors as are found on the labels.

Labels for Round Cans

MOST OF THE TROUBLE which is met in labeling can be attributed to the use of labels which are off size, improperly trimmed or printed, cross-grain or incompletely dried. The following scuggestions will be found helpful and will save time in the mechanical application of the labels, making frequent readjustment of labeling machines unnecessary.

To determine the correct length of a label, add ¾ in. to the distance around the body of the can. It is generally known that wet paste on tin is likely to cause rust so that it is desirable to keep all paste between the two thicknesses of paper. For this and other reasons, experience has shown the inadvisability of using short labels, and in the interest of standardization the general adoption of the above rule is highly desirable for any size round, hermetically sealed, friction lid, screw top or slip cover cans.

To determine the proper width, deduct 1/16 in. from the distance between the can flanges. It is impracticable to calculate on labels fitting snugly between the flanges, particularly on double seamed cans, because the distance between the flanges varies according to the adjustment of the individual closing machines. A full width label on a slightly narrow body will run up on the flange and fail to make a neat appearance. The slight clearance provided by adopting the above rule assures more uniformity in matching the laps of labels under varying conditions. On slip cover cans, the correct width is determined by deducting 7/32 in. between the inside of bottom flange and the top edge of the lid.

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The following are dimensions for standard size labels for double seamed cans of the sizes shown:

Can Size	Type	Size of Label
2 1/8 in. x 4 in.	No. 1	3 1/8 in. x 8 1/8 in.
3 in. x 4 1/8 in.	No. 1 tall	4 3/8 in. x 9 1/8 in.
3 3/8 in. x 4 5/16 in.	No. 2	4 1/4 in. x 11 1/8 in.
4 in. x 4 1/8 in.	No. 2 1/2	4 3/8 in. x 13 1/8 in.
4 1/4 in. x 4 7/8 in.	No. 3	4 9/16 in. x 13 1/8 in.

Particular care should be used in trimming labels to avoid tapering, i.e., the packs being wider at the bottom than at the top. Each pack should also be trimmed uniform in width, i. e., not wider at one end than at the other as it is impossible under such conditions to match the laps at both top and bottom.

It is well to have the laps meet in some sort of a circle style effect rather than in a straight line, because of the difficulty of trimming absolutely parallel to the border. A slight irregularity of matching at the border is not recognized with a circle effect design.

On embossed labels, arrange the design so that the embossing is distributed somewhat uniformly over the label instead of being concentrated in one spot. Don't run it closer than one inch to the plain or lap end, although it may extend to the other end if on both top and bottom border as well as in the center. When embossing is placed in the center only, the thickness of the pack is increased at that point, thus giving the pack an unevenness which renders efficient control impossible without frequent adjustments. The embossing should not be "overdone" as this causes the labels to cling together, making it difficult to separate them. If embossing dies are cut with round corners, labels will separate more readily.

White laps are more effectively sealed than either inked or varnished ones because any paste adheres less thoroughly to the latter. For this reason, label designs should extend only about 1/16 in. longer than the distance around the can body. The length of the varnished surface should also be determined in the same way. It is especially desirable on friction lid and slip-cover cans to put the lap on the left end.

For high class or embossed work, a coated litho 25 x 38, 60 lb. to 500 sheets, makes the best label. A satisfactory label is also made from super-calender 25 x 38, 55 lb. to 500 sheets. Where a heavy varnished label is required, the stock must necessarily be lighter and a super-calender of the same dimensions weighing 52 lb. to 500 sheets is generally used.

The grain of the paper should run lengthwise on all labels excepting on those to be pasted all over, and shrunk on containers of baking powders, cereals, etc.

If the grain runs crosswise or with the width of the label it becomes tender after the lap is moistened and is more likely to tear while being stretched. Furthermore, the lap tends to curl back before the paste dries.

Too deep a register causes the labels to pucker up in the center, thus preventing the cans from getting uniform contact at each side and in the center.

Mailing Containers

By RALPH L. HARDEN

Mason Box Company

WHEN OVER 500 PAGES of the Official Postal Guide, published by the Post Office Department, is devoted to rules and regulations, it may be readily seen that there are many restrictions placed upon the postal shipper. This means that the postal shipping problem cannot be thought of in terms of "just a box" but rather as the right type of box for the particular class of mail used or product shipped.

The time is past when a little of old "empties" on the shelf will answer all the demands of the shipper. Today, with all the complexities of transportation, one's package takes no pleasure jaunt or tour de luxe in its travels to customers. In the sorting room, on the mail trucks or in the mail car of the Limited, it is rammed, crammed and slammed. The mail clerks play no favorites—big ones, fat ones and skinny ones crowd, punch and squeeze each other. Time is the important factor in the postal service; schedules must be maintained at all costs. Hence, no kid gloves are used. One, therefore, must use a container that is strong enough to stand the strain, yet light enough not to cost excess postage. It must comply with all Post Office regulations.

The following are descriptions of the more common types of mailing containers:

Parcel Post Box: This box is used for all unsealed mail and because of the metal fasteners that securely close the box requires neither wrapping nor tying. The most widely used type of mailing container because of its simplicity, exceptional lightness and great strength.

Fourth Class Box: This box is made to meet the demands of shippers using sealed Third and Fourth Class mail. An exceptionally strong box which, in additional to the metal fasteners on the sides of the box, has gummed flaps at each end which allow it to be sealed. The gummed flaps are an integral part of the box itself and are usually imprinted with a safety tint which prevents tampering without detection.

Registered Mail Box: This box is made in a style

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and weight to meet the exacting demands of the Post Office department for registered mail and requires no wrapping or tying. Usually made from extra heavy stock to give added protection; it is sealed by means of gummed flaps on the sides and ends. These flaps are printed with a safety tint which prevents tampering without detection.

No-Break Box: This box is usually made in two styles; one with metal fasteners for unsealed mail and one with the sealing flaps for sealed mail, the basic construction, however, being the same. To the regular mailing box is added an inner lining of double faced corrugated board making absolutely the strongest mailing box obtainable. This type of box is extensively used for fragile goods, diamonds and jewelry, glassware, electrotypes and all products that need maximum protection.

Metal Edge Box: A two-piece set-up box, re-enforced at the corners with metal straps. Exceptionally rigid and adaptable to the shipment of a wide range of products.

Letter Box: This is a two-compartment container that allows the first class letter or bill to be mailed together with second, third or fourth class matter and reach the addressee at the same time. The envelope compartment on the top of the box is an integral part of the box wrap. The window in the envelope compartment allows the address of the letter to serve also as the address on the envelope and box. The box is closed by means of metal fasteners.

Returnable Box: This box is made in two styles, both having the same general purpose of allowing the recipient to make convenient return to the sender. There is a cut-out in the cover through which a reversible address card shows. For memorandum or returnable shipments it is only necessary to reverse the printed address card and the box is ready for return trip. Addressing and stamping for both forwarding and return can be done before the box is shipped on its original journey.

Screw Cap Containers: For shipments of liquids over four ounces, the Post Office Department requires that they be mailed in a water-tight tube closed by means of a screw-top cover with sufficient screw threads to require at least one and one-half complete turns before it will come off. Bottles must be surrounded with bran, wadding or other absorbent material in suffiicient quantity to absorb all the liquid in case of breakage.

Rigid Mailer: For photographs, sketches, proofs or any matter that must be shipped flat, this type of mailer should be used. A single piece of double-faced corrugated board incorporated with a wrap of heavy kraft paper allows the package to be shipped either sealed or unsealed.

Locked Box: A novel tamper-proof box, known as the "Everlokt," which embodies a positive lock and is obtainable in various sizes. This box goes out by first class bonded mailing and after it is once sealed cannot be opened without destroying. A similar type can be used for third and fourth class mailing under an arrangement with the Post Office Department that provides for inspection and subsequent sealing.

Generally speaking all mailing containers fall into the above classes. Unusual products sometimes call for special treatment but their design incorporates one or more features of the above styles.

Cartoning Machinery

By CHARLES L. BARR

F. B. Redington Company

CONTINUED INTEREST in the development of cartoning machines* that marked the activities of leading manufacturers of this type of packaging equipment since the latter part of 1928 is still in evidence.

Of importance to producers of cartoned products, are recently developed types of cartoning machines different in design and operation. The outstanding characteristic of such a machine is that instead of pushing the contents into the carton, as has always been done heretofore, the carton is expanded and fed over the contents. Some of the advantages of this method will be obvious, such as the practical elimination of the possibility of marring the appearance of the contents whether these contents are collapsible tubes or jars or bottles, the labels of which are easily marred. Another feature is the unique and simple method used for feeding the carton from the magazine and expanding it.

Some other advantages claimed by the manufacturers of this new type cartoning machine are:

1. Reduction to an absolute minimum of the use of reciprocating motions resulting in higher speeds and infinitely smoother and quieter operation.

2. Entire elimination of cams for the first time in any type of cartoning machine.

3. Adaptability. Practically any of the usual cartoned products can be handled such as collapsible tubes, bottles, jars, bars of soap, candy, etc., in-

*It should be understood that the descriptive term "Cartoning Machines" used in this article does not include that group of packaging systems, including weighing units, lining units, cartoning units, etc., used for packaging coffee, cereals, soap chips, flour, and the like. This group of machinery will be found adequately treated elswhere in this volume.

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cluding the handling of circulars and corrugated protectors such as is usually required of cartoning machines. Several outstanding producers of cartoned products in this country have already installed this latest type of cartoning machine.

Probably second in importance has been the development of means to eliminate the manual task of feeding the contents of the carton onto the intake conveyor of the cartoning machine. For instance, the latest type of cartoning machines for collapsible tubes may be had arranged to automatically take the tubes from the latest types of tube filling machines with only the most casual attention of one operator. Also the most recently installed cartoning machines for handling bottles and jars have their intake conveyors so arranged that the bottles or jars may be discharged from the labeling machine directly onto them in an upright position thereafter being automatically laid on their sides to be cartoned.

Next in importance, perhaps, has been the continued development of adjustable cartoning machines. Within limits that have become well defined adjustable cartoning machines are now obtainable as completely reliable and as economically sound from an operating standpoint as any cartoning machine for one size. Time required to change from one size to another has been reduced to a negligible point and the adjustments simplified to the extent that the plant handy man can hardly go wrong.

The advantages of adjustable cartoning machines to producers of cartoned products lies chiefly in their saving of floor space. In some cases three or four production lines that heretofore produced only one size, each operating only part of the time, have been combined. The resulting saving in floor space has been considerable, not to mention the greatly decreased capital expenditure for the necessary equipment.

Another project that continues to occupy the attention of the development departments of certain manufacturers is that of cartoning machines with which are combined means for automatically wrapping the product before it is cartoned as is the custom with such products as bars of soap, baking chocolate, certain candy bars, etc. A variation of this development has produced a number of cartoning machines that are provided with means to wrap the carton, after it has been filled and closed; in wax paper wrapper in some cases, in others, a transparent cellulose wrapper. Still another variation labels glass vials and then cartons them.

These combination machines have already reached a high degree of perfection. In some cases the speeds attained exceed the speeds available in machines for the wrapping only.

Automatic Wrapping Machines

By ALDEN FRENCH

Package Machinery Company

THE GROWTH of automatic wrapping machines during the last twenty years has taken them into so many different industries that it would be impossible to list all the products that are now being wrapped automatically. There are available some seventy different models, ranging from large bundling machines for a dozen soda cracker cartons, which operate at 12 to 15 bundles a minute, down to the small high speed machines for razor blades, lump sugar and chewing gum which run at speeds up to 600 per minute.

Among the most recent developments, the first and probably the most important is the adoption of the "electric eye" or photo-electric cell method of cutting printed wrappers from a roll and registering them accurately on each package. The real significance of this invention can best be seen in its adaptation for printed transparent cellulose. Heretofore, if a manufacturer wished to wrap his product in this material, so designed that a printed message, or picture, must be accurately centered on the package, it was necessary to do this by hand. No satisfactory method has yet been found for feeding such wrappings in sheets on a wrapping machine and if used in roll form there is no way of controlling with sufficient accuracy the location of the cutoff. This development, therefore, has two important advantages, first, it cuts printed transparent cellulose costs 10 to 25 per cent, for it is this much cheaper in rolls than in sheets, and, second, it allows the user of this wrapping material to wrap his product by machinery and thus greatly reduce his wrapping costs.

Various methods for controlling accurately the cutting of labels from rolls have been tried. The difficulty has been to synchronize the length cut by the machine with the spacing of the printing, for no matter how accurately a machine is adjusted there are bound to be slight variations caused by stretching or shrinking of the paper, and atmosphere conditions which will very shortly throw the printing entirely out of register.

Suppose for instance, each sheet is cut only .01 in. longer or shorter than the actual spacing of the printing. To eliminate these unavoidable variations, the photo-electric cell, or electric eye as it is popularly called, has been incorporated into the paper feed

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mechanism so that it actually observes the printing on each wrapper as it goes by and either shortens or lengthens the amount that the rolls unwind.

To describe briefly how this device works, a spot is printed on the transparent cellulose at intervals equal to the length of the wrapper to be cut. By mechanically seeing this spot once in each revolution of the machine the electric eye controls the length of the sheet, making the necessary compensations in the unwinding mechanism according to whether it sees the spot too soon or too late. The electrical apparatus required for this operation is far less complicated than the ordinary radio set. It contains no battery and has only three tubes, one of which is the photo-electric cell, the other two, amplifier tubes.

Many successful installations have been made in various industries. Cigars are now being wrapped in transparent cellulose with the band or the design being printed right on the wrapper. Candy-coated chewing gum is now available in a single transparent wrapper with the printing located with great accuracy. Biscuit cartons and candy bars are also being wrapped in the new electric eye style.

In the chewing gum field not only has this utilization been adapted for the wrapping of candy-coated gum but the high speed machine that makes the regular five-stick package has been improved by the addition of a transparent wrapping unit. This machine now wraps and bands single sticks, puts a label around the five sticks and then wraps the package in moistureproof transparent cellulose. This machine is capable of turning out 120 completed packages per minute which means that the single sticks are wrapped at a speed of 600 per minute.

Another field in which great strides have been made during the past year is the baking industry. A new bread wrapping machine has now been perfected which is featured by greater ease of adjustability combined with a larger range of sizes. The actual wrappings has been further improved also, due to the use of water cooled plates in the discharge mechanism. These have two advantages: they permit the use of the wrapping machine in a room with high temperature and they also cut down the floorspace occupied by the machine, as the wrapper can now be sealed in a much shorter time. A new slicing machine has also been developed to be used in connection with the new bread wrapper. The slicer is radically new in principle and is giving a splendid account of itself.

The general trend towards interchangeability in wrapping machines has been broadened during the year. Existing models have been re-designed to make them more flexible and easier to change from one size to another.

The well known "tight seal" wrap, adopted so successfully two years ago by the leading manufacturers of cigarettes is now being used on a great many other packages. By this method of sealing, the moisture-proof qualities of the wrapper are utilized to their fullest extent. The folds of the transparent cellulose are not merely stuck together in one place but are firmly sealed down at every point where the wrapper comes in contact with itself. This is an important advance in the field of protective wrapping.

The newest convert to the use of transparent cellulose as the wrapper for the modern package can be found in the dairy field. A machine has recently been developed to put a transparent cellulose seal over the top of milk bottles and while still in its infancy the prospects of its success are excellent.

New developments are constantly being brought out. Existing machines are being improved, by increasing their speed and making them more adjustable and more flexible as the different styles of wrapping they can perform. Whatever your package is, if it is to be wrapped, there is an excellent chance that there is a machine that can do it.

Convertibility in Automatic Package Wrapping Machines

By ARTHUR H. AXBERG
Johnson Automatic Sealer Company

THE CONSIDERATION of wrapping machines built to handle more than one size is a most important one to the buyer of wrapping machinery. Even though the buyer has only one size package in mind and could secure a one-size machine, which would be non-convertible, for the wrapping of that package, the adaptability offered by equipment that can handle a variety of sizes merits serious attention.

New goods and new package sizes are being offered and tested in various markets to such an extent that the buyer must protect his machine investment in the event a change in size is made or more than one package is required to be handled on the same machine. Convertibility can now be offered with present models to obtain an efficiency equal to the non-convertible type.

In describing the usual type of wrapping machine which accommodates more than one size package the term "adjustable" is often used, and this is correct

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in description. It is adjustable in the sense of requiring two or three hours of a skilled mechanic's time to adjust the machine from one size to another, using wrenches, tools, etc., for the changing of parts, their location, etc., and unfortunately resulting not only in a loss of mechanic and operator's time but hours of production, and sometimes waste of material to adapt the machine from one size package to another and to obtain the satisfactory wrap.

A convertible machine amounts, in effect, to several non-convertible machines with the efficiency of a non-convertible machine built into one frame. With a convertible model the important parts, relating to the proper application and folding of the wrapper about the packages, are all built into a complete table with all associated parts attached. These are quickly locked into a fixed position and are as quickly removable, eliminating the hazards of adjustability and in addition effecting a more economic wrapping operation by producing saleable wrapped packages without the usual attendant delays in losses experienced due to the human element of adjustability. The use of a convertible machine permits the removal of equipment built exactly to handle one individual size package, substituting in its place equipment built to handle another size package, pressing the starting lever and wrapping the second size.

Convertible wrapping machines are built in several models to cover a wide range of sizes, and in many instances as many as six or ten varied but related sizes of packages are handled on the same machine, often involving the shifting from one size to another three to five times per day. Plain or moisture-proof transparent cellulose, unprinted or printed, can now be used for wrapping material as successfully as the familiar waxed or glassine paper. In the case of printed wrappers it is possible to secure exact registration of design. The tendency in the use of such wrappers is towards greater display.

Such articles as packages of envelopes and stationery, trays containing marshmallows, rubber dolls, candy, dates, cookies, etc., as well as the familiar packages of coffee, tea and spices are wrapped on these convertible models. Either air tight end sealing or the usual type of end folding are optional for the different sizes and kinds of packages to be handled. Selection of machines and models can also be made to wrap packages over on their side with the long longitudinal seam on the narrow panel, or flat, as the customer may desire.

The manufacturer of packaged merchandise with the ever-changing requirements resulting from keen competition or a desire to push forward can be well protected with this possibility of grouping a number of different sizes on the same machine. Convertibility is perhaps the most important thing, together with the successful functioning of the wrapping machine, that can be considered in the use of wrapping equipment today.

Collapsible Tube Filling

By H. G. ADDISON

Arthur Colton Company

THE CONSTANTLY INCREASING USE of collapsible tubes is due in no small way to the ease of operation and flexibility, as to changes in size, of the modern tube filling equipment. A complete outfit for filling, closing and clipping collapsible tubes may be purchased for as little as $130 and this will perform these operations at 15 to 20 tubes per minute. The small user of collapsible tubes is thus almost as efficient, right from the start, as the larger user. A complete range of equipment of various sizes is available without the necessity of building any special equipment. For less than a thousand dollars a complete outfit to turn out 35 tubes per minute can be had. As production warrants, this output can be increased to sixty or eighty tubes per minute. A new completely automatic filling, closing and clipping machine operates at speeds up to 140 tubes per minute with one operator and is designed to feed directly into automatic cartoning machines.

Considering the work they perform, modern tube filling, closing and clipping machines are remarkably simple and can be maintained in proper operating condition by careful employees. No unusual mechanical skill is required in making the various adjustments for different sizes of tubes, and if those considering the use of this equipment for the first time will put their problem up to a reputable maker of this class of machinery, they can rest assured that the machines will perform to their satisfaction.

The selection of tube filling equipment depends on three important factors: first, the consistency of the material at the time of filling; secondly, the range of sizes of tubes; third, the daily production which is to be anticipated by the plant.

If possible, materials such as cold creams, ointments, etc., should be filled in a warm fluid condition, as much simpler filling units can be employed. At the same time, it is unwise to fill tubes with any material in a warm state, should the material shrink considerably on cooling. This shrinkage will buckle the wall of the tube, giving it a partially empty appearance, which is undesirable to the consumer.

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It is also common for a tube user to attempt to overfill a tube in order to give a "fat" appearance and impress the purchaser with the quantity of material he is getting. This over-filling of tubes is efficiency's greatest enemy as it is necessary to stop frequently and wipe off the jaws of the closing devices. In addition to this, these tubes are most liable to leak after being on the dealers' shelves under unusual climatic conditions. A properly filled tube has sufficient flat on the closed end to allow material to expand without seepage through the closed and clipped ends. An "overfilled" tube will usually have a layer of the material inside the fold of the tube, and if the material is even mildly corrosive, such as a shaving cream, the tube decoration and the clip, if used, will soon be spoiled in appearance.

Two methods of sealing the tubes after filling can be used. These are the use of a double fold, as in the past, or the use of "clipless closures," which have been introduced during the past two years.

The closing of tubes using clips is done as follows: The end of the tube is flattened, a portion of it turned over, and pressed flat. This operation is then repeated, all automatically, of course. For material, such as lighter fluid, rubber cement, rubber solvents, etc., containing highly volatile material, it is sometimes advisable to make the first portion turned over wider than usual, with the second fold the regular width. This gives eight thicknesses of material rather than the six thicknesses obtained with the regular fold, and in reality makes the seal fifty per cent more secure.

After the closing operation, the clipping is performed. This guards the end of the tube and prevents accidental opening of the folded end. Tube clips are cheap and are applied automatically by most users. At the time the clip is applied, a control number can be stamped on one side of the clip if desired.

One of the clipless closures types referred to above consists of making the two usual double folds and then turning the corners back obliquely. The other type is accomplished by making the two usual double folds, with the second fold wider than is customary. The double fold is then folded in a reverse direction and corrugations are applied to give added strength and security to the tube contents.

A decorative band to match the tube decoration can be used on the end of the tube to enhance its appearance. Control numbers or dating codes can be stamped on the tubes using the clipless closure. Ejection of the tubes from the machine after the three operations of filling, closing, and clipping are performed, can be automatic or manual as desired.

A recent development in collapsible tube filling is the application of the electric eye as utilized to obtain proper registration, during the filling and closing operations, of trade mark or other decoration on the face of the tube. Formerly done by operators, it is now possible to obtain such placement automatically and at higher speeds.

Labeling Machines

LABELING MACHINES have been developed along with the filling, screw-capping, cartoning and wrapping machine to such an extent that they are of equal importance to the manufacturers for many reasons. Nor is their sphere limited only to the food, drug, chemical, toilet preparation and bottling industries, but they find their way into the cigarette and cigar factory, hardware, hosiery and almost every line where labels are used. Mop and broom handles are now labeled by machines, likewise insecticide sprayers and wet-stones.

Some of the advantages of the modern labeling machine are the following: It produces a large output, occupies a comparatively small floor space, labels neatly, accurately and uniformly.

Labeling machines may be classified, first, as semi-automatic and automatic and the latter as rotary, straightaway and can labelers.

The semi-automatic labelers were designed primarily for the labeling of beer and similar bottles, but their use today covers almost the entire labeling field. They are in greater demand today than ever because even the small manufacturer believes in machinery for its economy and superior quality of the work performed. The semi-automatic labeler, however, requires an operator to feed each package or container to be labeled. The article is placed into the machines by hand, the label or labels are applied and then the article removed from the machine by the operator. The speed of these machines being limited to 25 to 30 articles per minute or less, depending upon the character of the article and the energy of the operator, led to the development of the fully automatic labeling machine. Nevertheless, the semi-automatic labeler will always be popular and profitable for small production and where short runs of many different sizes and shapes of packages must be labeled.

The automatic rotary labeling machine, which is an outgrowth of the semi-automatic, gums the label and applies it in a similar manner, but it has incorporated conveyors for feeding the articles through the machine without handling them by the operator and therefore is much faster than the semi-automatic

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labeler, attaining a speed of 85 to 90 per minute. A recent important improvement in this type of labeler is the attachment for applying tinfoil around the neck of ginger ale and like bottles. They are furnished by several concerns and are particularly adapted to the labeling of round bottles and jars used in the bottling and food industries as well as some chemical and drug products. They apply on bottles, the body label only, the body and neck label or the body and neck labels and the tinfoil.

The straightaway type of automatic labeling machines, which are of more recent design than those above mentioned, go further into the general field of labeling because they can be adapted to sealing or labeling cartons, boxes, wrapped cakes of soap as well as the food, drug and bottlers' products. They have many advantages in the way of speed, accurate registration, cleanliness, adjustability and accessibility. They are built in two standard types known as single and double labelers, both of which types are also furnished in the duplex models.

The single labeler applies one label on one side of the package or container and the double labeler two labels on opposite sides simultaneously.

The single duplex labeler applies one label on each of two packages or containers at the same time and the double duplex four labels on both sides of two articles simultaneously. In other words, if these machines are running sixty revolutions per minute, the single will apply 60, the double 120, the single duplex 120 and the double duplex 240 labels per minute athough the machine is running comparatively slowly.

The duplex labeler is a recent development born of the insatiable American demand for speed and production. In order to keep pace with the filling, capping, cartoning and wrapping machines, all of which are often hooked up with an automatic labeler in a straight-line production unit, it was necessary to get greater output from the labeler without applying the glued label in less time. It requires time to apply glue to the label and more time to make the label adhere properly to the container, therefore the slow running duplex labeler can do a better job than the single machine speeded up which seemingly throws the label at the package without sufficient time to apply it properly.

No less important is the perfection of another automatic labeling machine for round bottles where the name of the product appears in raised lettering on the bottle. In such instances it is an absolute necessity to "spot" the label in a determined position in order that every package will be labeled and look alike with respect to the lettering in the glass. Previously this was done by hand or on semi-automatic machines where the best was a good guess at the proper spot for the label. Some manufacturers have discarded their trade mark on the bottle because of the inconvenience in placing the label accurately and automatically. Examples of this spot lobeling are to be found in the "Vaseline" and "Listerine" bottles. Such bottles can now be adapted where the name of the product is in the glass to tell what it is after the label is destroyed and with the knowledge that they can be properly labeled by fully automatic machines.

Regarding the quality of the labeling done by hand and by machine, manufacturers may say that no machine can do this work well enough. However, such objections can be answered by referring to the labeling of cigar boxes which are perhaps some of the best labeled packages in our showcases. The labels are beautiful, of many colors, embossed and cut neatly and accurately. Until recently they were applied by hand, which almost ruined their good appearance and lustre. Because paste was used instead of glue it soaked the label and destroyed the colors. Then it was placed by hand and wiped on with a rag which killed the embossing and smeared the colors. Today the automatic machine applies thin glue quickly, applies the label at once and places it even more accurately than the hand. The result is that the moisture in the glue does not have time to penetrate the label, therefore the embossing and colors remain just as the printer made them.

Incidentally, it might be said here that 95 per cent of a cigar box can be made on automatic machines which insure their uniform shape and size just as the machine-made bottle is uniform, which requisite is most important for machine handling. Unless uniformity in size and shape is obtained, efficient labeling is impossible.

Can labeler. Where full length labels which overlap are applied to round containers, the universally known automatic round package labeler is in general use, one type of machine being for hermetically sealed, friction lid and screw top containers, while another is for slip cover containers. One or the other types of machine are employed in the food packing and kindred industries, including paints and specialties and the other in most of the coffee plants as well as several salt factories. Cans with ears such as large packages of paint are also automatically labeled through utilizing a full length label which overlaps and is died out to encircle the ears, thus supplanting the front and back label formerly used. Glass containers have also come within the scope of the automatic round container labeler, nationally known products like Sal Heptica being labeled on this type of machine as well as glass containers of insecticides, toilet preparations, fruit juices, etc.

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This type of machine can operate at a speed of from 150 to 250 or more packages per minute because of the fact that the packages are rolled through and a comparatively simple and speedy form of mechanism can thus be utilized, hence the automatic round package type of labeler is the speediest mechanical medium available and fulfills all the necessary requirements.

Modern factory practice has demonstrated the importance of machine production and that manufacturer is wise who leaves no stone unturned to place all of his manufacturing on a machine basis. The use of machinery in the finishing or packing department is as important as in the actual processes of manufacture and the manufacturer who extends his machine methods to these departments is bound to profit more than the one who does not take advantage of the equipment offered.

In general, a labeling machine can be equipped with attachments to handle a manufacturer's package without alteration but occasionally a minor change in container or label will simplify the work and enable the labeling to be done with a minimum of care. Where new packages or labels are designed it is well for the manufacturer to bear in mind a few simple facts that will enable him to favor the labeling machine and to operate under the most ideal conditions. The best labels are made from thin paper, soft and comparatively light in weight so that they will conform easily to the shape of the container. The surface of the container should be such that the label will naturally follow the contour without wrinkling. A spherical surface is impossible for the label must curve in two directions and will not lay smooth. Where hexagonal, octagonal or similar containers are used the size of the label should be such that the edges of the label should extend well over the corners of the container and on the flat sides to prevent the edges of the label from becoming loose after the label had been wiped on and the container removed from the machine. The observance of these rules will make for efficient practice.

Carton and Can Filling Equipment

By WILLIAM K. EMBLETON

Pneumatic Scale Corporation, Ltd.

DEVELOPMENT and perfection of automatic machinery enables the packer to obtain quantity production at lower costs, to standardize the sizes of his packages, and enable him to carry to the consumer, through the message printed on his package, a standard name of trade mark by which the consumer can again seek his particular brand of products. This insures the packer his reward for maintaining qualities.

There is no necessity for any manufacturer to depend on hand labor in assembling his package, as American machine designers have developed and refined automatic machinery for every packaging purpose to such an extent that today a machine is obtainable whether the packaging process follows standard practices or is of a special nature.

Inasmuch as machinery must be considered somewhere in all packaging production plans, the first consideration is the positive necessity for careful attention and preparation of the various component parts in the make-up of the package. All materials entering into the make-up of the package should be purchased with a view to their efficient handling by automatic machinery.

In considering a carton product, the size of the carton should be carefully worked out to obtain the best dimensions for easy machine handling. The construction of the carton should be carefully planned to be sure that the side gluing seams are in proper position, and the side flat cut to the proper length. Careful attention to these details in the beginning will save both the packer and the machine manufacturer a great deal of trouble and grief when the time comes for installing machinery.

This does not mean that cartons, protective papers or labels for machine handling differ importantly from the same materials that would be used for hand packing. It simply means that there are certain necessary features and specifications to be followed to make sure that all materials will follow uniform lines. All cartoning materials handled on automatic machines are manufactured on accepted commercial standards, but it must be borne in mind that a machine is made of iron and steel, along fixed lines, and if the material fed to the machine differs in size and shape, then trouble is bound to ensue.

As an illustration, if sealing and filling were the only consideration, a carton might be planned to obtain the largest possible face, perhaps because an advertising advantage might be seen. In doing so, the base of the carton would necessarily have to be narrow, so much so that when handled on a machine, this narrow base would mean a constant tipping of the carton, with its attendant troubles and delays.

Therefore, in planning a carton, care should be taken to have the various dimensions properly proportioned. The ideal specifications are to have the

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face of the carton approximately twice the thickness, the height one and one-half times the width. The cubic content of the carton must be carefully considered. If a pound of ground coffee is to be packed by hand, a carton containing about 66 cu. in. would be sufficiently large for the reason that there is no time limit to the tamping or settling of the coffee, whereas if the carton were handled by machine a cubic content of 72 cu. in. would be necessary for the reason that the carton passes through the machine on a certain definite time schedule and receives a definite amount of tamping. Machine experience proves that with a carton containing 72 cu. in. a pound of ground coffee would settle nicely just below the score or folding lines of the side flaps.

Labels and wrappers with the grain of the paper running the same as specified by the machine manufacturer should be obtained. Paper curls with the grain of the paper and when labels or wrappers are moistened, the paper stretches with the grain. If the labels are handled by hand, sometimes it is not important which way the labels curl or the way the paper stretches, but if handled by machine the curl and stretch must be one way, and the same with every label.

Label and wrapper manufacturers are always glad to follow definite specifications for grain of paper when so ordered. Again, it is simply a question of care in ordering and being sure that the specifications are correct.

Any manufacturer of automatic packaging machinery will be glad to furnish definite specifications covering the construction of cartons or the make-up of labels. Securing these details will save many weeks of labor later on when machine production is planned both on the part of the packer and the machine manufacturer.

Many packers hesitate in the beginning to think of using machinery, believing that automatic machinery will prove too expensive for their purpose. Investigation will prove this is not true, as machine manufacturers are able to furnish equipment that will economically fit in with the requirements, not only of the larger packer, but also with the packer whose output is small.

The market today offers every thing from inexpensive semi-automatic equipment, which operates at comparatively low speeds, to the highly specialized fully automatic equipment, operating at the higher speeds, and no matter which class of machinery is used, they are all planned so that with their use outputs can be obtained more efficiently and economically than by hand labor.

Packers just establishing a carton packaging business can install a semi-automatic carton sealing machine. This would require the services of an operator and would produce from 12 to 15 satisfactorily sealed cartons per minute. For the weighing operations, he can obtain a small semi-automatic weighing machine which will operate at the same speed as the carton sealing machine. These two machines can be hooked together by connecting conveyor belts so that, as the cartons are sealed, they are automatically passed along to the weighing machine. An operator would be necessary at the weighing machine, but even considering the investment of the two machines, the upkeep charges and the labor costs of two operators, packages can be produced at a far less cost than the same number can be produced by hand labor.

As outputs increase, speedier and more fully automatic equipment will be needed. The semi-automatic machines can then be discarded in favor of a battery of machines with which can be performed the entire operation of picking up the cartons one by one, feeding them to the sealing machine, then automatically passing them to the weighing machine and, after the material is weighed and filled into the sealed cartons, passed to the sealing machine for closing and sealing the tops.

Should the product be of a character to require extraordinary protection against atmospheric or other conditions an inner paper bag liner would have to be used. This lining would require an additional machine placed between the bottom sealing and weighing machine, the lining machine taking paper from a roll, cutting off the proper length, forming the bag and inserting the finished bag into the carton.

A set of machines of this character would make the entire packaging process entirely automatic, only one attendant being necessary to see that the machines are properly oiled and kept in good running order.

Equipment as above described would deliver thirty complete sealed, lined and filled packages per minute.

For the packer whose output exceeds 15,000 packages a day, equipment of higher speeds will be necessary and equipment at 60 packages per minute will interest him. This high speed equipment performs the same operations in the same manner as described for 30-per-minute equipment in the same general line-up; each individual machine, however, is more sturdily and elaborately constructed, and naturally, this heavier equipment is considerably more expensive than that of operating at the lower speed of 30 per minute.

The equipment just described would be used by the manufacturer packing in the plain printed carton, used without any outer wrapping. Materials such as tea, coffee, spices, sugar, rice, borax, coco-

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nut, drugs, poultry and stock remedies, macaroni, starch can be packed without any further protection than the printed carton with often an inner lining.

In many instances the character of the material packed may demand a package that would offer greater strength than the printed carton, and would also embody superior protective features. The modern machine designers have met this higher requirement with a machine called the tight wrapper, which produces the highest type of package yet devised. Reference is made to this type of packages elsewhere in the PACKAGING CATALOG.

The foregoing treats of rectangular packages only. Separate types of machines are necessary for producing round packages, but as in the case of the rectangular package, automatic machinery can be obtained for every process in the make-up of the round package, first weighing material and filling it into the package, then applying the cans and labeling.

Round packaging equipment is manufactured in various types, ranging from the semi-automatic at slow speeds to the high speed fully automatic equipment operating at a speed of 60 per minute.

The weighing machine units include those that will weigh gross, that is, including the weight of the container with the weight of the goods; others that weigh the material net. This is accomplished by weighing first in calibrated and balanced receivers, after which the material is poured into the waiting containers. Net weight weighers are particularly desirable where the material handled is of an expensive nature and extreme accuracies desirable. The savings in wastage alone with this type of machine often pays the cost of the machine in a short time.

Practically every labeling need can now be met with machinery of standard construction. This includes loose labeling machines, which apply the label loosely around the can, just applying the glue at the seam of the label or a rim of glue around the top and bottom of the label. Types of loose labeling machines are manufactured for labeling either round or rectangular cans. Then, there is the shrink-tight labeler, which is necessary for use when cans with high outstanding beads are to be labeled, these similar to the standard baking powder cans, or where the covers of the cans are of larger diameter than the bodies. Loose labels cannot be used with this type of can, for the reason that the high outstanding bead or the larger covers hold the label away from the body of the can, producing unsightly wrinkling, and a label only half attached.

The shrink-tight labeler overcomes this difficulty by passing the label through a bath of tepid water. This allows the label paper to stretch, the stretch in the label paper being about ⅜ in. to the foot. Adhesive is then placed over the entire unprinted surface of the label while it is wet; it is then carefully registered around the can, which is passed along to an automatic dryer. The air in this dryer is heated. A series of revolving shelves move slowly around, so that the label dries gradually, and in so doing, shrinks tightly around the high outstanding bear or the oversized covers, as the case may be, without the slightest wrinkle, and insuring the covers being held tightly to the bodies of the cans, eliminating any possibility of leakage. About one-half hour is required to make the journey around the dryer, after which the can is automatically ejected and is ready for subsequent packing operations.

Practically all types of carton packaging, filling, wrapping or labeling machines are constructed so that they can be adjusted to several different sizes of cartons within reasonable range. Different commodities can be handled on the same machine where the characters of the commodities do not change too radically. This is done by fitting the filling machines with hoppers especially designed to meet the requirements of the different products.

Care should be taken when purchasing machines to choose manufacturers who can assure a reliable service that will maintain the machines in good working condition, and so guard against any break in packaging operations which will curtail output.

Dry Product Filling

By A. J. STERLING

DRY PRODUCT FILLING is fundamentally divided into three distinct classes of machinery or methods: packing—wherein the quantity is determined by the density in the container; volume—wherein the quantity is determined by measuring the material by means of a definite number of turns of an auger; weighing—wherein the quantity is determined by scales but equipped with force feed into buckets and a settling conveyor.

The construction of machinery to accomplish any of the described methods varies according to the individual manufacturer and his engineering capabilities. Some of these machines are more complicated than others and it is well, therefore, to remember that simplicity of construction and performance is that which stamps fine engineering and longevity of the machine with the least possible amount of expenses for upkeep. It is this simplicity of construc-

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tion that goes far toward procuring exactness in weights. Too many cams, electrical contacts and unnecessary movements bring about the reverse of exact weights and the need of too many mechanics.

All dry materials can be divided into two general classifications—free flowing and non-free flowing materials. In a way, the names of these two divisions are self descriptive, but there are many kinds of materials which apparently are free flowing but as a matter of fact cannot be so classed. Practically all free flowing materials can be weighed, whereas the usual method of measuring non-free flowing materials is either by volume or by packing. Each one of these general classifications has many divisions and, as might be expected, the dividing line between the divisions with some kinds of materials is very finely drawn.

Referring to the free flowing materials, we find the range from very coarse materials that have no tendency to stick or arch down through to the so-called free flowing materials which need some assistance in the form of agitation or pressure to make them flow freely into buckets. Of course the type of machine will depend somewhat upon the character of the material, but in general all of these types of materials can be automatically weighed. Practically all types of automatic weighing machines work on the principle of weighed load shutting off the flow of material into the weighing bucket. This means that there must always be a certain amount of material between the load in the bucket and the cut-off point and the accuracy of weighing is dependent on the uniformity of the flow of this stream of material and the quickness with which the mechanism operates to cut off the flow from the action of the descending bucket.

The problem of handling non-free flowing materials is more complicated as the differences in the character of the materials are more marked than in free flowing materials and the characteristics of the non-free flowing materials cause more difficulty in handling it.

There are two methods of filling non-free flowing materials: first, by packing, and second, by volume filling. In certain cases the material is required to be put into containers with greater density than the normal conditions of the material would permit, and in such instances the material is *packed* into containers. The amount which goes into the container is determined by the density of the material in the containers, and when the required density has been obtained the feeding mechanism is tripped so that the flow of material is stopped.

When the amount of material required in the container is not greater than that which can be held with the material in the normal condition or with a small amount of settling, the method of volume filling is used. This is really a measuring method and when the proper amount has been measured out the mechanism is stopped. One of the great advantages of handling materials by the packing method is that in a material where the consistency is constantly changing the variation in volume will be automatically taken care of because the amount of material is based on the density of the pack rather than on the amount of material in a certain volume. The volume method of filling is sufficiently accurate for materials where the consistency is reasonably uniform.

There are some kinds of material which have some characteristics of free flowing and other characteristics of non-free flowing materials, and in handling these kinds a combination of net weighing with volume filling is employed. It is hard to lay down definite rules for classification of materials because there are so many varying elements entering into the determination, and the selection of the proper equipment to handle different kinds of dry material can only be made after a broad experience in this field.

Therefore it is well when endeavoring to choose a machine suited for the particular work at hand to study the problem thoroughly and to submit it to some manufacturer well known for his accuracy and for the work that he has done in similar fields. That which may have been accomplished, in what appeared to be the same as your particular problem, may be accomplished in the same manner and yet may require entirely different treatment.

Bottle Filling Equipment

By E. E. FINCH

The Karl Kiefer Machine Company

THE TERM "BOTTLING EQUIPMENT" is of comparatively recent origin. Twenty-five years ago, with the exception of large breweries and a few soft-drink establishments where automatic filling and closing machines were used, complete bottling equipment was unknown. At that time few liquid products were sold in bottles. There are two very distinct lines of bottling endeavor, one for the handling of carbonated beverages, the other for the bottling of what is commonly known as "still" liquids.

The development of filling machines for "still" liquids may be divided into three stages and generally can be referred to as three systems or meth-

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ods of filling. These may be classified as filling by the siphon method, by the direct pressure method and by the vacuum method. The equipment may be referred to as the very simple hand-operated machine, then later with the semi-automatic machine and finally with the large full automatic machines. The syphon type, hand-operated machine, originally imported from Europe, was in use from 1900 to about 1910. The pressure type machines from 1910 to near 1920 and the vacuum machines from 1918 to the present. During the first decade there was a very limited sale of bottle goods and, therefore, no demand for other than simple machines.

In 1900 there were available two types of syphon filling machines, rather limited as to use and production. They were known as the Edson syphon filler and the Kiefer Perfection syphon filler. Both were six stem machines and were designed for filling bottles from half-pints to quarts.

Syphon Method of Filling

The syphon method, briefly, makes use of a supply tank with a float valve, the liquid coming from a storage tank into this supply tank and when it reaches a certain level the liquid is shut off automatically by the float that operates the inlet valve. Connected to this tank are the filling stems. Bottles are placed on the filling stems and the syphon is established by different methods, either by suction through the stem or by air forced into the supply tank, and the flow continues into the bottle until the liquid level in the bottles is on a level with the liquid level in the tank.

An adjustable table takes care of the various heights and sizes of bottles, and a very accurate fill is obtained. The method, while slow, was eminently satisfactory for the requirements of that day.

The first development in this country of what might be called a bottling unit or complete bottling equipment occurred about 1910. Just prior to that the states of Georgia and Alabama went prohibition and mail order liquor houses came into existence. Both the mail order liquor houses and distilleries immediately found it necessary to bottle liquor more rapidly and more economically than they ever had in the past and thus was developed bottling equipment consisting of bottle washing machines, filling machines, corkers, labeling machines, belt conveyors, etc. This business continued to grow until about 1915 and during that time larger and better filling machines were developed.

The syphon method of filling was improved by larger semi-automatic and some automatic rotary machines. About 1910, or the beginning of the second decade, there came into existence the straight line direct pressure filler. This latter type of filling machine was made as a straight line machine, six stems to the line and filled six bottles at a time. The liquid came from a supply tank above the machine directly through the filling head and stems into the bottles. The head of the filling machine was lowered, the stems entering the bottle, with a rubber seal resting on the mouth of the bottle making it airtight.

The stem was a double unit with an overflow or air outlet tube and a filling tube. As the liquid entered the bottle the air escaped through this overflow and when the liquid had reached the air outlet, it was filled to the desired height. If the head was allowed to remain down the liquid continued to overflow through this overflow tube, the various stems connecting to a manifold and the overflow running off into a container at the side of the machine or into a pump, which returned the product to the supply tank. This type of machine was efficient, made in various sizes and was a decided step forward from a production point of view over the old simple syphon machines. Up to 40 and 45 bottles a minute were obtained by this type of machine, and they are still used, having been found to operate efficiently when used in filling strong, sturdy bottles.

Direct Pressure Method

The direct pressure is perhaps the simplest method of filling but it has certain objections. If a bottle is chipped or cracked around the mouth or is imperfect in any way the liquid continues to flow into the bottle and through the bottle on to the machine or on the floor. If a piece of the bottle breaks in filling hot products, as sometimes occurs, the liquid flows through that aperture until the filling head is raised.

There were also developed some automatic rotary machines of the direct pressure type that were highly efficient and quite wonderful when considered from a viewpoint of the day. Some of these machines are still in operation.

Along about 1914 with the increase in the merchandising of small packages there arose a necessity for a filling machine to fill not only bottles but also glass jars and tin cans of various types. There were products of a viscous nature that could not be handled by a syphon method or even by the direct pressure method. As the demand increased for a machine to handle viscous products such as jams, jellies, preserves, mustard, syrups, ointments, paints, varnishes, etc., there were developed measuring types of machines and these were of two general types and known as the rotary gear type and the piston type.

In the rotary gear type a special spiral gear pump was invented that in operation on the filling machine measured an exact quantity into the container,

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as it was automatically carried around the filling head. Changing of gears changes the speed of the pump according to the quantity desired and the speed at which the machine is operated under ordinary conditions.

The machine is also equipped with a friction drive for the finer accuracies desired for measuring an exact quantity into a container, and has been developed to a point where it measures to the fraction of an ounce, giving the accuracy desired in filling small as well as large containers. It is today used for filling all viscous and semi-viscous products such as paints, oils, creams, ointments, mustard, etc., although some improvements and developments have been made; anad where originally a speed of 40 a minute was considered ample, new machines now operate at a speed of from 90 to 140 containers per minute.

Piston Type Machines

There are two styles of piston type machines. In the first the product flows direct from supply tank to the cylinders of the machine and in the other the product flows into a hopper located directly above the cylinders. In both types the piston is set to deliver a predetermined quantity at each stroke. As the piston is drawn back in the cylinder, the liquid follows or is sucked into the cylinder and then on the reverse stroke is forced out of the cylinder through filling nozzles into the container. These machines are made in various sizes with production possibilities of from 25 to 100 containers per minute.

While the increase in the distribution of liquid products in bottles was considerable from 1910 to 1918, the tremendous development really began about 1918, and with the exception of the slight slump in 1921 and part of 1922, has continued to grow to a surprising degree. Where a factory had a production of one hundred gross of bottles a day in 1918, which was considered something out of the ordinary, today hundreds of factories do as much and a great number of factories each produce several hundred gross per operating day.

Natually with this tremendous increase in bottled goods of all sorts there developed an increase in sizes and types of bottles. Peculiarly shaped bottles, very small bottles were, and to some extent still are, difficult to manufacture with a guarantee to perfection. Attempting to fill such bottles at a high rate of speed and a percentage imperfect meant tremendous loss in production as well as in the product itself and the extra labor entailed.

The old type of pressure machine would not do and thus there came into existence the vacuum type of filling machine. Originally this was a simple device, a hand arrangement that filled one, possibly two bottles at a time.

It was at once obvious that in the filling of small bottles such as those for perfumes, extracts, and similar products where the percentage of bottle imperfection was very large, the vacuum method of filling eliminated entirely the loss of liquid because it would not fill an imperfect bottle. Machinery manufacturers were not slow to see these advantages and various types of machines have been developed.

Today there is still the simple single stem and double stem hand vacuum filler, the small semi-automatic straight line machines, the tray type machines, the large automatic rotary type machines and the automatic straight line machines.

In the direct pressure machine the supply tank was above the filling machine and the product flowed by gravity from this tank through the head and thence through the stems of the machines into the bottles. As the liquid flowed in, it forced the air out ahead of the liquid.

In the vacuum machine the product comes from the manufacturers' supply tank into a small supply tank on the filling machine, located below the filling head or stems. The vacuum produced in the bottle first draws the air out and thus the vacuum established in the bottle draws the liquid from the small supply tank.

Operation of Vacuum Machine

The vacuum machine is extremely simple in its method of operation. The stems are connected by such methods as the various manufacturers of these machines may employ to the small supply tank on the machine. The stem is really a multiple stem, having two openings. Located on the stem is a rubber seal which may be adjustable, and the lower end of the stem enters the bottle to the height at which it is to be filled. At that point the mouth of the bottle is resting firmly against the rubber seal on the stem. Immediately the mouth of the bottle comes in firm contact with the rubber seal; the vacuum, which is produced by either individual vacuum pumps or a general vacuum system in the plant, draws the air out of the bottles through the smaller of the two openings in the stems. When that occurs the liquid naturally follows through the other opening or filling line, fills the bottle up to the air outlet and if the bottle remains in contact with the seal the excess liquid overflows through the air or vacuum line into a vacuum bowl and by means of an ingenious device is automatically returned to the suppy tank on the machine. If all connections are tight, if both the air line and the filling line are clean and free, then all perfect bottles will be filled.

The methods of handling the bottles to and from the machines are varied. On some straight line machines the bottles are brought in under the fill-

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ing stems, the head of the machines is lowered, stems entering the bottles, and the rubber seals on the stems are firmly compressed against the mouths of the bottles. In some other types of machines the bottles are raised, the filling head remaining stationary.

In automatic rotary type machines, bottles are fed automatically from a conveyor into the filling machine. Each bottle is handled on a separate lifting tray, and after being filled is automatically discharged from the machine on to a conveyor.

Straight Line Machines

On straight line automatic machines the bottles are carried forward on a conveyor and automatically transferred from the conveyor to a platform which raises the bottles up to the filling head. After being filled the bottles are again automatically placed back on the conveyor. Only partial vacuum is necessary to fill the bottles. In handling heavy products at high speed, vacuum up to 18 in. to 20 in. may be used, but the average liquid filled in the average bottle requires only from 3 in. to 7 in. of vacuum. To give a more specific illustration, on some of the larger automatic rotary machines filling a product such as catsup at 100 pint bottles per minute requires not more than 8 in. of vacuum.

The advantage of the vacuum method of filling are so varied and so great that this type of machine has almost entirely superseded the older types such as syphon and pressure machines.

The accurate measure type in which the liquid is first measured in measuring cups and then dispensed into the container, is especially well adapted to the filling of products that are of an expensive nature such as essential oils, etc., where an accuracy of quantity is more desirable than a uniform filling height in all of the containers filled. The cup measuring type can be graduated down to a very close margin, as differentiated from the piston type which cannot be classed as an absolute accurate measure for it will fluctuate slightly.

There is another type of accurate measure filler and that is the electrically operated cut-off type or weighing type which is used to some extent in the oil refineries.

The machinery manufacturers have developed various machines that will suit the requirements of almost every bottler. The machines range from the smallest or hand-operated units with a capacity of 10 to 20 bottles per minute, up to 30 to 50 a minute with a semi-automatic, and from 75 to 150 with full automatic machines.

Automatic Printing Machinery

By A. A. MORSE

THE DEVELOPMENT and improvement of automatic printing machinery make it possible for the manufacturer to operate his own printing plant under conditions which effect savings on his requirements for printed wraps, labels, cartons, tags, etc.

The design of automatic printing machines conforms with the principle of continuous straight line production, so necessary for manufacturing economy today. Paper travels through the machine in as straight a line as possible, during which it receives successively the various colors making up the completed printed design. After being printed it goes through various supplementary operations such as cutting, scoring, folding, perforating, numbering, etc.

Automatic printing machinery falls in two classifications:

(a) Machines in which the paper travels forward in a continuous roll, such as the Chambon automatic printing machine and the New Era press.

(b) Machines in which the paper is fed through in sheet form on multi-color presses such as the Claybourn press.

Chambon Printing Machine. With this type of machine, paper is furnished in rolls and travels through the press in a straight line. Printing operations are successively performed by cylindrical, chrome-plated bronze or steel plates good for as many as 100,000,000 impressions. All mechanical motions are rotary to avoid vibration and noise. Specially designed ink fountains supply the ink. Any number of colors may be used. Both sides of the paper can be printed at the same time. Register is perfect. The quality of the work is predetermined and built into the machine, eliminating the usual element of personal skill.

These machines can be adapted for letterpress printing, dry offset, or rotogravure. Combinations of these can be effected. The same machine can be used for scoring, creasing, embossing, perforating, slitting and rewinding, sheeting, dieing out to shape, and other supplementary operations.

They may be operated 85 to 95 per cent of the working day. Compact in size, they require but a fraction of the space required for ordinary equipment. While designed primarily for a particular job they possess a flexibility feature which permits changing over to other jobs at slight expense.

New Era Press. In this press the paper also travels forward from the roll through the press, but with an intermittent motion. As the paper comes to

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rest from time to time under each of the printing units, it receives successively the different colors from these units while it is at rest. After being printed it passes through the various special units such as the perforating, cutting and scoring, punching, numbering, tag-making, metal eyeletting, etc. Each of these different units operate while the paper is at rest. After these various operations are performed, the web continues to travel through the slitting unit where it can be slit into strips if desired and then to the cut-off or rewind, where it is either rewound into rolls or cut off into sheets.

The machine is not intended for ordinary job work but is intended particularly for specialties. It is used by a great many specialty printers for printing roll tickets, railway tickets, strip tickets, etc., by the gummed label manufacturers for printing gummed labels and tape, in strips, roll or sheets; by the tag manufacturers for printing and making tags, and by carton makers for printing, scoring and creasing as well as cutting small cartons.

Claybourn Press. A multi-color sheet-fed rotary press manufactured in from one to five colors, and in two sizes. These presses can be started quickly and operated at high speeds. Perfected printing plates result in twice as many impressions per plate. While this type of press requires more floor space than the two types mentioned above, it effects considerable economies due to the high speeds at which it can be operated and the large size of the sheet which it will take. The manufacturers of this press also make a five-color high-speed web label press which takes the paper in rolls, prints it, and delivers it in sheet form.

Displaying the Package

By FRANK GONDA

Einson-Freeman Company, Inc.

THE ADVERTISER or manufacturer of packaged merchandise who wants to improve the appearance or attractiveness of his product, is seldom if ever impelled to do so by any abstract aesthetic considerations or pure love of art. There is one motive, and only one, back of any effort to improve a package—and that motive is to make it *sell.*

But there is another vital fact that some manufacturers seem to forget, and that is the obvious, simple truth that the most attractive package cannot *sell* if it is not *seen.* For that reason, no sane, far-sighted merchandiser of a packaged product plans his package without having the factor of window and store display definitely in mind, and making adequate provision for it in both his budget and his plans. And just as a purely aesthetic viewpoint seldom results in producing a package design that *sells,* so the creation of a successful display must inevitably be based on three practical considerations:

DRYBAK
BAND-AID
NEW WATERPROOF ADHESIVE BANDAGE
DRYBAK BAND-AID WATERPROOF SPEED BANDAGE
DRYBAK BAND-AID WATERPROOF SPEED BANDAGE
KEEPS LITTLE HURTS FROM GROWING BIG
DRYBAK BAND-AID WATERPROOF SPEED BANDAGE
DRYBAK BAND-AID WATERPROOF SPEED BANDAGE

Double-tier type of lithographed counter display for space saving. Courtesy of Einson-Freeman Co., Inc.

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Collapsible package pyramid type of display has obvious advantages. Courtesy of Einson-Freeman Company, Inc.

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- New trends in merchandising and retailing practice.
- Basic changes in economic conditions.

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Floor stand display with life-size figure uses space otherwise unoccupied. Courtesy of Forbes Lithograph Manufacturing Company

Physical limitations of store layout and space.

Only by recognizing these new developments, and devising displays that intelligently meet their problems, can the advertiser be even reasonably sure that all the care expended on designing his new package is not rendered largely ineffective. What then, specifically, are these new factors affecting the problem of package display?

The one single factor that has influenced modern retailing practice more than any other, is the rise of the chain system of merchandising. It has been responsible for the "mass merchandise" display and "group item" window. It has introduced "open display," and the "self-service" idea. It has made necessary the compact utilization of every inch of available space.

But if chain methods, and their adoption by independent retailers, have contributed much toward increasing the efficiency of retail merchandising, they have also multiplied the difficulties of getting adequate display for the individual advertiser's product.

"Hand-to-mouth" buying, brought about by the general economic stringency, and increasingly keener competition for the constantly diminishing amount of display space available, have further complicated the advertiser's problems, but only served to stimulate the ingenuity and resourcefulness of both user and producer of displays.

How are these problems being solved today? What new plans, new principles of display have been developed to meet them? In the main, these fall into two classifications: (1) cooperation, and (2) adaptation.

Lithographed display which features product and premium offer. Courtesy of Einson-Freeman Company, Inc.

Window display of rubber goods in which the product is supplemented by three lithographed display cards. At right: a counter display basket which permits open display of goods within easy reach of shopper. Both by courtesy of Forbes Lithograph Manufacturing Company

By *cooperation,* we mean any plan, idea or device intended to help the retailer (A) to sell the advertiser's product; (B) to sell other allied merchandise in his stock, and (C) to sell his store or service to the public.

Excellent examples of an intelligent plan to help the dealer to dispose of the advertiser's product are the jig-saw puzzle premium offers made recently by Pro-phy-lac-tic, Pepsodent, Westinghouse, Loose-Wiles and other leading advertisers, who took advantage of a popular craze to move merchandise off their dealers' shelves. The Unguentine floor stand illustrates an even more altruistic principle. It not only sells Norwich products designed to help the public "enjoy the sun," but lists other timely vacation needs carried by the druggist. The third idea was brought out by a highly successful Johnson & Johnson "Red Cross Products" window display, which featured the druggist as a reliable source for prescriptions.

Adaptation may be defined as the shrewd application to the display of a new merchandising principle or new development in retailing; or the intelligent application of the display to a specific and new problem of retailing.

The vogue of the "mass merchandise" display and "group item" window, for instance, has made it hard for the manufacturer to insure that his product would stand out in a general display—even if the store carried enough packages in stock to *permit* of display at all. Dummy cartons or, "empties" were no solution. They encouraged waste and possible refilling—and the manufacturer had neither any control over *how* these dummies would be used, nor any assurance that they *would* be used.

The answer to this problem is the collapsible "package pyramid," which simulates perfectly an actual pile of merchandise, does away with waste or substitution, and insures the advertiser that his packages will be displayed exactly as he wants them, with the message he wants and with greater prominence than he could possibly otherwise secure.

The 'open display" or "self-service" idea, based on the chain store principle, "get the merchandise into their hands, and it's more than three-quarters sold," is represented by three tremendously successful types of displays, as follows:

The assortment or selection display.

The bargain display.

The related item or group display.

The Devoe & Raynolds "counter merchandiser," offering a large assortment of paint brushes of various sizes, and the Pro-phy-lac-tic hair brush display, featuring a selection at several prices, are fine examples of the first type.

The Lipton Tea, Johnson & Johnson and Toddy "counter baskets" are the highly popular bargain or "jumble" type; while the Unguentine floor-stand already mentioned is a representative example of the "family" or group item display.

The floor display also represents a relatively recent departure in store interior display. It is both a triumph over the problem of competition for space and an example of the most modern development in efficient store layout—the "island counter," or a counter accessible not merely from one, but *several* sides, thus multiplying its chances to sell. Since there was so little room left on the store's counters, manufacturers simply decided to furnish their own counters—and, presto, the floor stand was evolved.

The "double-tier" type of counter display container, illustrated by the "Band-Aid" display, is an even more ingenious solution of the counter space problem. Since counter area is so scarce, it makes use of the "skyscraper" idea, and raises two rows of packages *upright,* one above the other. And because, like the actual skyscraper, it also towers above containers or packages lying *flat* on the counter, it is *seen first*—and beats competitors to the consumer's vital "first glance."

Finally, the A B C hanging display and the Probak or Cooper Razor Blade "theft-proof" displays that function as gravity dispensers (like a slot machine); and the Red Cross Merchandise panel, that shows realistic replicas of the entire line, set off by easels, in a narrow panel that fits a column in a window, show two efficient ways of utilizing otherwise waste space.

All of these ideas are illuminating examples of how American inventiveness and enterprise can overcome the gravest handicap and pioneer new paths to business progress and greater sales.

Metal Displays for Packages

By D. H. BITNEY

Union Steel Products Company

THE DESIGNING and manufacturing of lithographed sheet metal or wire display racks has been studied and developed to a high degree of perfection, and has kept pace with the constant improvements in the packaging of products. In the past two years there have been some attractive and economical display racks developed for almost every type and kind of package, from a fly swatter to a hot water bottle. The racks provide displays for products that it would be impossible to display in

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any other way, and it would be out of the question to get the merchant to display the product, unless an easy and attractive method was provided. Invariably these displays immediately increase the sales of the product, and please the dealer who keeps the display fixture in use for many months. They very often pay for themselves the first month they are used.

O'BRIEN'S VARNISH
Dries in 2 Hours
for floors, linoleum, woodwork,
furniture, automobiles and every other surface about the home

Lithographed steel display which carries sales messages and offers descriptive booklet. Courtesy of Sommer Bros. Company

The more inexpensive display racks or fixtures are generally sold to the dealer with a deal of some kind. Some racks are included with a gross of a certain package, or with a contract covering a certain quantity during the year. Naturally more merchandise is sold to the dealer than he has purchased previously, for you have provided a means for him to sell more of the merchandise, and bring more profit to him.

The heavier and more expensive racks are most always loaned to the merchant, and if he purchases a certain amount of merchandise during the year, the rack becomes his property. The method of handling the display rack with the merchant of course depends a great deal on the value of the merchandise displayed on the rack. The selling or loaning of the racks to a merchant always makes the merchant respect the rack more, and as long as he has any money tied up in them, or the rack belongs to someone else, he will see that it is kept in use and that he gets all the good out of it that he can; while if the racks are given to the merchant, he very often sells out the deal that came with the rack and before they get in more merchandise to re-fill the rack, a new deal or a new display is in its place, and very often the rack is not used again, or at least it does not get used continually.

There have been several novel schemes of display that have worked out satisfactorily. One manufacturer wanted to get a prominent display of his liquid cleaner. He knew that he could not get it displayed prominently without providing a rack, and even then he did not believe that the merchant would display his cleaner prominently without some further inducement. He finally provided a rack with his bottled cleaner attractively displayed in the bottom of the rack and the top of the rack was a good sized basket in which the dealer could display anything he wished. This gave the dealer a floor display of any product he wished to feature, and also gave the manufacturer of the cleaner a display directly under the product which the merchant was featuring. This particular type of rack could be worked out for a great many products, and would work to advantage for both the dealer and the manufacturer.

A rack has also been developed to display articles which are easily associated together, such as head lettuce and mayonnaise. In an effort to get the butcher shop to handle and display coffee, racks have been provided by the wholesale grocer to display pancake flour, coffee, bacon, eggs, etc., for breakfast. Many racks have been made to prominently display premiums along with the products which are sold to get these premiums. Spices are hard to keep straight on shelving, and it is almost impossible to stack them one on top of the other, without getting anything short of a mixed-up pile of small containers. A rack has been developed that will hold these small spice cans at an attractive angle and always keep them straight and orderly. This rack can be used on the shelving or can be set out on the counter when a dealer wishes to make a special on spices. The rack can be used for any other kinds of packages of a small size.

A coffee display rack has been developed that attractively displays 36 cans of vacuum packed coffee. The cans are placed in the back of the rack, and are taken out at the front, and the stock is rotated so that it practically assures the grocers that no can of coffee will remain in his stock for long, as it often does on the shelving.

Wire rack display which permits advantageous showing of individual packages. Courtesy of Union Steel Products Company

The statement is often made: "We will have to have a high-class display rack for our merchandise is high-class and goes to a high-class trade." A nickel-plated or gold-plated rack will not sell high-class merchandise or any other kind of merchandise. Remember that you are not selling racks — you are selling merchandise off of the rack, and if your package is attractive, it would sell best if suspended in mid-air, without any rack, or anything to detract from it. The more you can get your merchandise out in front of your display fixture, the less you can see of your fixture—the better your product is displayed and the more of your merchandise you will sell.

Transportation of Packages

By J. D. MALCOLMSON

Robert Gair Company, Inc.

Corrugated and Solid Fibre Containers

A FIBRE shipping container is a tough, efficient and economical outer package built to withstand the wear and tear of freight, express and parcel post shipment. It is used for shipping all manner of commodities up to a weight limit of ninety pounds. There are two types of these boxes, both equally popular—the laminated walled "solid fibre" box and the cellular "double faced corrugated" box.

The fibre container is an evolution, partly of the ordinary paper carton, and partly of the familiar corrugated straw sheet, used, among other things, as a wrapper for bottles and incandescent lamps. Corrugated paper itself has been in use for some fifty years as an interior packing and wrapping material. More recently, one face and then two were glued to this corrugated sheet to make a rigid board; but it was not until 1903 that experimental freight shipments were made in boxes built from this combined material. In 1906 the general use of fibre containers for freight shipments was authorized by the railroads, and this marked the real start of the industry.

Economically considered, the fibre box is an important factor in forest conservation, inasmuch as only about one-sixth of its raw material is new wood pulp, the balance being largely reworked waste paper. This waste paper, moreover, usually contains a fair proportion of old fibre boxes which have outlived their period of usefulness and have found their way back to the paper mill. These savings are in addition to the billions of feet of lumber for wooden boxes that are replaced.

The average fibre box weighs only from two to three pounds, which means a reduction of shipping weight anywhere from 10 to 50 per cent when compared with the same size wooden boxes. It is shipped flat when empty, and in this form occupies about one-tenth of the space it will contain when set up.

The fibre container affords a satisfactory means for shipping fragile articles, as well as heavy commodities of relatively small size. Liquids in glass, for instance, are moved in these boxes with a minimum of breakage. The bottles are usually packed in cells formed by partitions of corrugated fibre board. Another method of packing which is in greater demand is the "unit carton" system. Articles such as electric irons, lamp fixtures, etc., are placed in an individual carton, which also contains the necessary accessories. A certain number of these cartons, say two dozen, are then shipped in a container, so designed that the contents exactly fill the box. The advantages of this system are that breakage is practically eliminated, the goods are received by the retailer in an attractive condition for displaying on his shelves, and the customer receives the article with its accessory fittings in a convenient and expeditious manner. Many of the larger box makers maintain elaborate designing departments, which are devoted to the devising of new and better methods of packing.

The advantages which are claimed for the use of fibre containers are as follows:

First Cost—Being largely made from waste products in large quantities, their first cost is relatively low as compared with other types.

Weight—Tare weights are relatively low, resulting in freight savings on shipments as well as on incoming supplies of boxes.

Convenience—The absence of nails and splinters prevents injury to hands or clothing in packing and invites freight handlers to lay aside their hooks. Its relatively small size, which is controlled by railroad requirements, makes for easy handling in shipment and storage. It is often used as a shelf package and as a unit package for delivery to the ultimate consumer without opening and re-packing.

Storage—Fibre containers are delivered flat and are stored in a minimum of space. Approximately ten of these flat cases can be stored in the space occupied by one of them when set up.

Concealed Theft is minimized, as the case, when properly sealed, must be practically destroyed to open it.

Sealing is very economical due to the development of automatic sealing machines which are described elsewhere in this volume.

Advertising—Being a paper product, these cases are susceptible to high grade printing in one or more colors and form a traveling billboard as long as they are in existence.

Sanitary Features—These cases are used new and seldom re-used. Paper linings are not necessary and dust and dirt find no access.

Accuracy—Shrinkage, warping and swelling are unknown.

Conservation—Timberlands are conserved as only a small proportion of the box consists of new wood pulp. The balance of the material includes discarded boxes re-worked into new paper.

Stacking—These boxes, due to the combination of light weight and rigid walls, can be stacked to the roof of most warehouses.

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Nomenclature

Much time and correspondence is wasted through different ideas of terminology. This is in part due to the rapid growth of this industry which has not had time to evolve a standardized vocabulary.

The following list is by no means complete but it does contain most of the terms which are subject to misinterpretation:

Fibre Containers—The general term which includes both corrugated and solid fibre cases. The words "fibre" or "fibre boxes" are often used to designate solid fibre containers, but this is open to misconstruction.

Corrugated Fibre Containers, or usually simply "corrugated cases," generally indicates boxes made of single strength, double faced corrugated board.

Corrugated Board is a general term and may mean any of the grades named below.

Unlined Corrugated is the corrugated paper alone with no "liners" or "facings." It is usually made of 0.009 in. straw but sometimes is 0.009 in. chip and unless otherwise specified, is the usual or large corrugation, 3/16 in. in height. It is used as wrapping material for lamp chimneys, etc., and has the disadvantage of stretching and thus losing the cushion value of the corrugations. It usually comes in rolls.

Single Faced Board has one liner which may be of straw, chip or jute and usually either 0.009 in., 0.012 in. or 0.016 in. thick. It is used for inner packing and wrapping and is usually sold in rolls 36 in. wide, 250 ft. long, weighing from 60 to 75 lbs.

Double Faced Board, or double lined corrugated, is made with two liners of straw, chip, jute or kraft and is described by the railroads as "single strength." It may be test or non-test board and cannot be rolled.

Double Strength Board is often spoken of as "double double" and "double walled," but the term "double strength" is preferable, as this is the designation used by the railroads. It is a combination of double face and single face, having three liners and two corrugations and is from ⅜ in. to ¼ in. thick.

Straw Paper or "Strawboard," used for the corrugations, is 100 per cent wheat straw, although rye, oat and rice straw is occasionally used. Strawboard is sometimes imported from Europe, usually from Holland. It is generally made 0.009 in. thick for corrugating, although 0.012 in. or heavier is sometimes used for this purpose. Chestnut waste, sulfate, sulfite and pine wood fibreboard is also permitted by the railroads for corrugations, but the production of these materials is relatively small.

Chip, or Chip Board, is made from mixed waste papers and is usually 0.009 in., 0.012 in. or 0.016 in. thick. The 0.009 grade is sometimes spoken of as "rag." Corrugated board with chip liners is usually used for interior packing.

News, or News Board, is made of newspapers and is sometimes used in place of chip, though more expensive. The other grades of box board do not enter, to any great extent, in the making of shipping containers.

Liners are the facings of single face, double face or double strength corrugated board. They may be 0.009 in., 0.012 in. or 0.016 in. chip or 0.016 in., 0.018 in., 0.023 in. or 0.030 in. jute or kaft. Solid fibre liners are usually 0.016 in. jute or kraft. "Liner" is also used to describe the interior packing sheet which lines the four sides of a case and which is usually made of double faced chip or straw corrugated board. This liner is usually made in one piece with three vertical creases but unjoined.

Jute is really a misnomer, as jute is no longer used in this industry. A "jute" liner is a mixture of new kraft or sulphate fibres and high grade mixed papers.

All-Kraft Liners—These contain no mixed papers but are usually made entirely of sulphate. They are among the new developments that are to be found in the industry.

Solid Fibre is a laminated board built by gluing several plies of board together with silicate of soda and is often referred to as "fibre" or fibreboard." (See *Fibre Containers.*) The two outer plies are made of jute or kraft. Solid fibre is usually made in 0.060 in., 0.080 in., and 0.100 in. thicknesses as called for in the Classification, but some 0.090 in. and 0.120 in. board is occasionally used for shipping containers.

Single-Lined Solid Fibre—This is not often used for shipping containers but is applicable where only a single bender is required and permitted.

Test and Non-Test Board—In this industry this usually applies to board that does or does not comply with the railroad requirements regarding bursting strength.

Express Stock—The correct name of this corrugated board is *jute and chip* which describes its construction. At one time this was acceptable for express shipments. The express rules are now essentially the same as the freight rules except that for most items of less than 35 lbs., jute and chip may still be used.

Mullen or Cady Test—These two instruments register the bursting strength of a board, presumably in terms of pounds per square inch. Actually the results are not exactly in these proportions and for this reason many people refer to the figures as Mullen "points" or "units." Both of these instruments are official as shown in Rule 41.

Webb Tester—This instrument overcomes many of the objections to the Mullen and Cady test by testing the liners of double face corrugated board separately, but it is not recognized as official by the railroads.

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Rule 41 is that part of Official Classification No. 7 which itemizes the specifications for corrugated and fibre shipping containers when used for freight shipments.

Rule 18—This does the same for express shipments and is a part of the Official Express Classification.

The Bureau of Explosives, 30 Vesey Street, New York City, issues a handbook containing additional express and freight container specifications for dangerous articles.

Food Administration Specifications—These are the same as the so-called *National Canners Association Specification* and specify higher test corrugated and solid fibre cases for canned goods than are required by the railroads. They are therefore regarded as being unofficial.

Certificate of Box Maker—This is sometimes known as the "Imprint."

The following list is not complete but covers the most important style of boxes:

Regular Slotted Carton (RSC)—Most containers, especially for freight shipments are made in this style because of the economy of using a straight cut blank. All flaps are the same length and the inner flaps do not meet unless the length and width are the same.

Special Slotted Carton—All Flaps Meet—Also called "Center Special Slotted Carton." This is more expensive as inner and outer flaps are of different lengths, necessitating an extra manufacturing operation with a loss of stock.

Full Overlap Slotted Carton—Also known as "Full Flap S. C." The length of the outer flaps is the same as the width of the box. The inner flaps may meet, gap or overlap. This style is usually desirable on a long narrow box and gives added strength to any shaped container.

One-Piece Folder—This has flaps at top only and is used to pack flat material such as advertising cut-outs for shipment by parcel post or express.

There are a great many other styles of corrugated and solid fibre shipping containers which are illustrated and described in a free handbook issued by the Paperboard Industries Association, 608 S. Dearborn St., Chicago, Illinois.

Cracker Caddy—This is a special container. Usually about 10 in. x 10 in. x 11 in., made of a moisture- and greaseproof board combination. It is occasionally referred to as "can" or a "qu."

Silicate of Soda—This is an adhesive sometimes used for sealing containers and always used in the manufacture of corrugated and solid fibre board. Another name is *water glass* and it is generally referred to as simply "silicate."

Point—In this industry a "point" is one thousandth of an inch. 0.060 in. board is spoken of as "sixty point" board.

Height—Depth—These synonymous words indicate the distance between the openings of a box, i.e., from top to bottom. "Height" is preferable as in some industries "depth" means from front to rear. The height of a slotted carton is always the last dimension.

Girth is used in the parcel post specifications and means the distance around the parcel at its thickest part.

Length in these P. O. specifications is the greatest distance in a straight line between two ends.

Nests, or Partitions, are slotted half way so that they interlock. A *Divider* is simply a vertical pad with no slots.

Star Cut Pad—This corrugated pad has radiating die cuts and is used to separate large glass objects, such as bowls and illuminating glassware. It is also known by such descriptive and imaginative terms as "rat trap pad" and "pie cut pad."

Die Cut Work is made on a special press and the initial cost of the die and extra make-ready must be allowed for. The ordinary fibre box equipment works in straight lines, at right angles, so that other unusual work must be made on a separate cutting and creasing press.

Crease and Score are used interchangeably but "crease" is preferable as "score" may mean a knife cut, as it does in the set-up box industry. Such a cut score is not used in the fibre container industry.

Joint and Seam—The railroads define "joint" as the result of the operation done by the box maker in taping or stitching the fourth corner of the box; and "seam" as the juncture that is closed by tape in the sealing process.

Bales and Bundles—This refers to Section 4 (*b*) of Rule 41 and means that items accepted under his category may be shipped in corrugated or solid fibre containers *without* restrictions as to weight or dimensions.

Printing Plates—Solid fibre is printed from brass plates or electrotypes. Corrugated board is printed from rubber plates which are cast from type or from a wood cut.

"A" Flute Corrugation is approximately 3/16 in. high, 36 to the foot; *"B" Flute Corrugation* is approximately 1/8 in. high, 50 to the foot.

Rules and Regulations Governing the Use of Fibre Containers in Transportation

It is essential that shippers as well as box makers be familiar with the regulations. They are too voluminous to remember but one should at least know where to secure the authoritative data. Below is given a summary of the various rules and regulations.

The more or less voluminous regulations covering shipments in corrugated and solid fibre boxes can be grouped as follows.

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1—Freight
2—Express
3—Parcel Post
4—Dangerous Articles
5—Export
6—Army and Navy

Many of the details in these rules apply only to the way in which the box must be made, and are not of particular interest to the shipper. Buried in the mass of material, however, are a lot of little jokers that are highly important to him, but it sometimes takes a minute to study to uncover them.

Freight—The "Bible" under this heading is the Consolidated Freight Classification No. 7, issued Aug. 5, 1932, effective Sept. 20, 1932—a formidable volume of 550 closely printed pages. This is issued in two sizes—one about the dimensions of a telephone directory and the "photo-reduction edition" about 5 in. x 7 in. x 1 in. Either size may be obtained for a nominal sum by writing to the Official Classification Committee, 143 Liberty St., New York City, the Southern Classification Committee in Atlanta or the Western Classification Committee in Chicago. The subscription includes the various supplements which are issued from time to time—also in photo-reduced form if desired. One should look over each supplement and make the necessary corrections in the large volume.

The well-known "Rule 41" of the Classification gives all the rules for manufacturing and sealing corrugated and solid fibre containers and the book also lists all commodities, telling how each may be packed. Thus, "In Boxes" means corrugated and solid fibre as well as wooden. "Bales" or "Bundles" means oversize boxes with no weight nor dimension limits, provided the case is roped or steel strapped. "Packages" is an undefined term occasionally encountered and is similar to "bales" and "bundles" except that the use of straps is not compulsory; and one item permits the use of 0.060 fibre "cartons" without dimension or weight limit. Some shippers like to strap several small fibre containers together to make a single unit. There is no rule against this but each individual box must conform to the requirements of Rule 41. "Wrapped in Fibreboard" is another definition applied chiefly to special forms of packing for furniture.

In the past a reshipping case for the handling of glass containers required partitions, pads and liners. The new specifications covered by Supplement No. 2 indicate that so long as the outer container comes up to the required test the interior packing is left entirely to the discretion of the shipper.

Shippers are constantly applying for changes in the rules. Such applications are listed from time to time in a published docket and hearings are later held at the three cities mentioned, to pass on these applications. Very conclusive evidence must usually be presented to effect a change, and "shipping history" plays a large part in this evidence.

Express—These regulations are governed by the Official Express Classification No. 31 issued in February, 1930. This is a small 60-page pamphlet with seven supplements to date. Only two supplements are in effect at any one time. Rule 18 describes fibre containers and is modeled very closely after the freight Rule 41, the principal difference being that the regular dimension limit is raised from 70 in. to 90 in. and the specifications for packages under 35 lbs. are much less severe than for freight.

Parcel Post—The post office rules are not as definite as those for express and freight. Form No. 3841 recommends the use of corrugated boxes for a number of listed commodities but specifications other than "securely wrapped" are not given. The usual parcel post weight and dimension limits apply. In case of doubt it is always best to submit the complete package to your local postmaster for approval.

Dangerous Articles—These come under the jurisdiction of the Bureau of Explosives, 30 Vesey St., New York City, and include such items as inflammable liquids, "strike anywhere" matches, fireworks, etc. The regulations are covered by a 440-page "Pamphlet No. 9" dated September, 1930, and by numerous later supplements.

In this classification, an "inflammable liquid" is one with a flash point at or below 80 deg. F. An immense amount of correspondence back and forth would be avoided if shippers of doubtful liquids would always mention the flash point of their product when making inquiries for shipping containers.

Forbidden Articles—A number of articles are forbidden for all of these transportation methods. These include certain explosives, chemicals and products susceptible to spontaneous combustion.

Export—There are no uniform rules for fibre containers for overseas shipments. Each steamship line makes its own rules and the stringency of these depends somewhat on the intensity of competition at the time the rules are made. The Paperboard Industries Association has done much valuable work in keeping these regulations within reasonable bounds and hopes eventually to help standardize them.

Army and Navy—During the War, the U. S. Army adopted certain specifications for fibre containers to be used in making shipments, particularly of canned goods, to training camps. This was done under the auspices of the Food Administration. At present the Navy has in effect Bulletin No. 65 C 12, effective February 1, 1926, and revised September 1, 1926. This is modeled after Rule 41 and a copy can be secured from the Supply Officer of any of the navy yards.

Conclusion—This set of regulations makes a formidable array but a great deal has already been

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accomplished in the direction of uniformity. It is to be hoped that this standardization will be kept in mind by the powers that be, when they make future changes or additions.

Patented Types of Fibre Containers

Almost an endless number of unusual boxes have been patented, advertised and finally forgotten. Most of these are either impracticable or too expensive for the purpose intended. Those in the limelight at the present time are:

The Reinforced Score Box—A corrugated container with a strip of tape glued over the score-line, either on the inner liner or inside the board. Three different companies have patents on variations of this idea.

The Reinforced Tape Joint, in which the ends of the tape on the manufacturer's joint is split and tucked under at each end.

Burlap-Covered Box—This is a corrugated box with an outer covering of burlap cemented on with asphalt. This box, because of its strength and moisture-proof qualities, is suitable for export use.

Recessed End Box—The ends of this solid fibre box, being recessed, are strengthened by the resulting stitched rim.

Bliss Box—This type of fibre container, designed by the H. R. Bliss Company of Niagara Falls, N. Y., consists of a three-piece box made of solid fibre or corrugated board. The blanks are joined by means of flanges stitched in place, which reinforces the corners and all vertical seams. It is claimed that the corners and vital seams are the vital parts of the fibre box and that when reinforced by stitched flanges, the resulting box is much better fitted to withstand the shocks and strains of handling and of transit. The box is also more rigid and can be stacked higher without bulging.

Top Sealing of Fibre Containers

Early methods for sealing the tops of fibre boxes were far from satisfactory and during the period when such containers were first being placed upon the market greatly retarded the development of their use. Great progress has been made in the last decade in the improvement of sealing methods and, at the present time, practically no trouble is encountered in this connection. For example, in a recent series of drum tests made on canned goods boxes, less than one per cent of the 1300 boxes tested failed through opening of the flaps.

Four principal methods of closure of fibre and corrugated boxes are now in general use, namely:

A. Sealing with adhesives such as glue or silicate of soda.

B. Sealing by means of wire stitching or rivets.

C. Sealing by the application of gummed tape.

D. Holding the flaps in place with steel strapping, rope or twine.

Each of these types of closure has its advantages for certain classes of work and is briefly described below. In many instances combinations of methods are employed such as gluing and taping to give air tight closures or gluing and strapping in order to make a package tight and, at the same time, enable it to be shipped classified as a "bundle."

Sealing With Adhesives

One of the most widely employed methods of sealing containers, especially when made of corrugated, consists in the application or a solution of vegetable glue or silicate of soda to the flaps which are then held together by pressure until the adhesive has taken an initial set. This requires from 45 to 50 seconds on corrugated board with jute liners, 50 to 55 seconds on solid fibre with jute liners and 50 seconds or more when kraft or very dense jute liners are used.

In many plants, sealing is done by hand, usually in two stages. Glue or silicate is applied with a brush to the inner surface of the outer bottom flaps of regular slotted containers and the flaps held together either in a simple hand sealer or by placing the box on the floor and applying weights inside. After the adhesive has set and the goods inserted, the top flaps are similarly glued and the box turned upside down so that the weight of the contents holds the flaps together. This is a relatively crude and inefficient method but has the advantage of simplicity and lack of any investment in machinery in plants where relatively few containers are required.

As the use of boxes increase in a plant, this method becomes burdensome because of the amount of labor required and also because of the space needed to store the boxes while being sealed. The first step in the line of automatic methods is to use a power-driven compression unit or sealer. This consists of two endless belts, top and bottom, either or both of which are power driven, the belts passing over rollers which, on the top unit, are backed up by coiled springs to give compression. The top unit can be quickly adjusted up or down to handle boxes of varying height. Guides are usually provided on each side of the entrance end to hold the boxes tightly as they enter the compression unit and thus prevent spreading of the flaps. The operation is intermittent, means being provided so that the belts move only when a new box is being inserted, thus keeping the box under compression for the greatest possible time. These compression units may be had in various sizes depending upon the length of the container and the hourly requirements.

A glue pot is fastened at the entrance end of the machine and a work table provided to support the box. The operator brushes the glue on the inside

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of the outer top flaps, folds in position, up-ends the box and glues the bottom flaps and then pushes the same into the machine, which moves it automatically thereafter. In this way both top and bottom flaps are sealed simultaneously. In some plants it is the custom to glue one end at a time, repeating the operation for the opposite end either in the same sealer or in a second sealer placed at the end of the first. When glassware is being handled, it is usual for the container to have the bottom flaps wire stitched at the glass plant, the empty jars inserted and the top flaps either spot sealed or held together by criss-cross tucking. At the packing plant where used, the glass jars after filling are replaced in the box and the top flaps sealed with adhesives as above. Care must be taken that too much adhesive is not applied as this lengthens the time of sealing and also causes staining of labels.

For plants where long runs of one size of container are to be sealed, the modern full automatic gluer and sealer is employed. The bottom flaps of the box are folded into place, contents are inserted and the filled case goes to the sealer on a gravity conveyor line. The machine automatically takes the unsealed cases and feeds them one at a time into the gluing unit where the outer flaps, top and bottom, are folded out, the adhesive applied evenly by means of a roller, flaps folded back into place and the box fed into a compression unit such as described above. Means are provided for holding the contents in place while the adhesive is being applied, and also for applying the same only where the inner and outer flaps would be in contact, thus economizing on adhesive and preventing damage to the contents of the box.

Wire Stitching

Wire stitching as a means of sealing boxes is of steadily increasing importance because of the greater security obtained, each staple giving a positive closure of the flaps. No setting time is required as with adhesive sealing and relatively cheap labor can be employed. Furthermore, if warehouse and repacking is required, the staples can be removed with a screw drive or a stitch removing tool without appreciable damage to the case whereas a box sealed with adhesives cannot be opened without serious tearing of the flaps. There was a time when it was thought that only solid fibre boxes could be wire stitched, but improvements in machines and methods have resulted in a widespread use of stitching of both tops and bottoms of boxes made of corrugated board.

The "manufacturer's seam" or overlapped flap joint is always wire stitched on solid fibre containers and there is an increasing tendency to use the same methods on corrugated boxes instead of a cloth taped joint heretofore largely employed. Whether taped or stitched the regular slotted container always comes to the user in flat condition and is stored in this form. When required for use, the box is first squared up and bottom stitched, the contents inserted and the top flaps then sealed by wire stitching over a blade anvil.

Where wire stitching is to be employed, the outer flaps on the bottom may be made to meet or overlapped 1 in. in the center, the latter construction being preferable in many cases for the protection of the goods and required if the inner flaps are more than 6 in. apart. Canned goods cases are seldom overlapped whereas shoe cases are almost always so constructed. If the contents of the case are heavy, overlaps up to 2 in. are often used. With overlapped cases a single row of stitches along the lap and also along each end is required, staples to be not over 2½ in. apart. When the outer flaps meet only, staples are placed on both sides of the joint as well as along the two ends.

A bottom stitcher consists of a cast iron frame supporting a stitching head with its driving mechanism in combination with a post about 40 in. high, having a clincher on its top which acts as the anvil for clinching the staple. Such a stitcher will occupy about five square feet of floor space and weigh from 500 to 600 pounds. The machine is motor driven either through a pinion and gear or by means of a belt, the motor being not over ¼ h.p. and usually connected to the nearest light socket. The machine is controlled by a foot pedal and will drive from 200 to 300 stitches per minute if run continuously. The stitching wire is fed from a spool attached to the stitcherhead and in the operation of the machine is automatically fed in, cut to proper length, bent over a mandrel to form the legs, driven through the flaps of the box and the legs tightly clinched on the underside. Quick adjustments are provided for handling various thicknesses of flaps by controlling the length of the wire and the space between the clinching anvil and the stitcher head. Small variations in thickness are automatically compensated for.

The post of the bottom stitcher is hinged at the bottom and, by means of a special foot pedal, is tilted forward for the insertion of the box to be stitched, being drawn back to a vertical position by means of a spring. The operator then depresses the stitcher pedal and drives the staples where required, moving the box on top of the post between stitches and stopping the operation only at the ends of the seams. A competent and experienced operator can easily bottom stitch from 200 to 400 cases per hour, depending upon the size and the convenience of the handling arrangements. On small containers like cracker boxes, two girls are often used, one folding and the other stitching, in which case speeds of 20 to 30 boxes per minute are frequently attained.

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The container after being bottom stitched will hold its shape and can be used to hold the goods until it is convenient to top seal the package. It may also be used for transferring goods from one department to another or even for shipments to warehouses.

When containers are to be top sealed by wire stitching, it is usual practice to have the outer flaps overlapped from 1 in. to 2 in., although it is allowable to stitch a case without overlap provided the inner flaps are not over 6 in. apart. The machine used is a top stitcher which is built like the above described bottom stitcher except that it has the clincher supported by a "blade anvil" or thin sword-like, steel arm horizontally attached to the machine. The box is supported on a flat work table containing many steel balls so that it may be rigidly supported and, at the same time, easily moved in any direction; this work-table being counterbalanced by means of springs or weights and instantly adjustable up or down to accommodate containers of varying heights. Top stitchers are made in several different sizes for handling different lengths of boxes, the size referring to the distance between the vertical support of the machine and the clinching point. Machines are also available in which the work table is power driven and by means of an accessory pedal can be moved up or down without physical effort on the part of the operator.

Combination bottom and top stitchers are also available for use in small plants or in large plants where cases are to be assembled and sealed in many departments. When used for bottom stitching, the blade anvil is dropped down against the column of the machine and the work table swung to one side out of the way; while for top stitching the post is removed from its support and placed in a convenient receptacle at the side of the column.

When sealing a case with overlapping top flaps, the box is placed on the work table and raised to the proper point so that the blade anvil will just enter between the flaps. The center overlap is first completely stitched to hold the box in shape, starting with the end furthest from the operator. The blade is then placed under one end of the inner flap nearest the operator and the box stitched along that end, leaving an open space of about 4 in. either in the middle or at one end. Double stitches are often driven on each side of the opening to prevent the stitches tearing out in the next operation. The box is then reversed, the blade inserted in the 4 in. opening and pushed through to the opposite end of the box and under the flaps which are then completely stitched, the anvil being afterward withdrawn through the opening. With this method all flaps are completely closed with stitches spaced not over 2½ in. apart except at one point, the opening here being allowable under the Classification rulings. When cases without over lap are to be top stitched, the blade anvil is inserted in the gap between the inner flaps and under one outer flap, one-half of the box being stitched and the operation then reversed, no end opening being required. This method is not as satisfactory as the first since the contents are not completely protected at the point of gap between inner flaps and is not permitted when the latter are more than 6 in. apart. The speed of top stitching depends upon the size of the container, the skill of the operator and the convenience of handling the boxes to and from the machine. In general, it may be said that from 180 to 250 boxes of average size and weight can be handled per hour.

While it is usual practice to have the large flaps outside for sealing, in some instances the inner flaps are both brought outside or one outside and the other inside. Can cases are often stitched with the end flaps outside as the top creases are thus brought higher than the chime of the can which tends to cut through the board at this point of relative weakness. Another sealing method consists of placing a reverse crease on the inner flaps about 2 in. from the end and bending the same back under the outer flaps. The overlap is stitched first and the "bellows flap" then stitched from each end. This method makes possible the complete sealing of each end of the box as no opening has to be provided for the withdrawal of the blade. Another method involves the use of a portable type of blade anvil stitcher suspended beside the conveyor line from an overhead trolley by means of a spring. With this machine, boxes of any weight or length can be sealed with one small machine and without the necessity of lifting the box to the work table of a stationary stitcher.

The wire used for stitching is usually copperized or galvanized stay wire, 0.103 in. wide and from 0.017 in. to 0.020 in. in thickness. The number of stitches of average length per pound of wire runs from 1600 to 2000 and the average cost from 4½ cents to 5½ cents per thousand staples driven. Another much used type of wire is 0.060 in. wide and from 0.020 in. to 0.024 in. thick, being somewhat less expensive than the regular ribbon wire but having nearly the same holding power. Stitching wire is now usually purchased in 5-lb. to 10-lb. spoolless coils, an aluminum spool holder being used in setting it up on the stitching machine. The length of the crown of the staple is usually $\frac{7}{16}$ in. or ⅜ in., although for some purposes longer or shorter crowns are employed.

In addition to sealing one-piece boxes, wire stitching is much used for making up telescope boxes (including suit boxes), sealing the bottoms and making up the tops of the popular cracker caddy, and also for assembling and sealing three-piece containers of the Bliss or recessed end style. Three-piece containers are often made with the outer flaps overlapped at the side and full automatic machinery is

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available for sealing such containers without the use of any hand labor whatsoever, the operation thus being comparable to that of full automatic gluing.

Metal Strapping

The application of metal strapping to fibre containers is a relatively new development and was started by a short clause written into the freight Classification within the past few years. The principal uses of metal strapping as applied to fibre containers are as follows:

1. Bundles and bales as defined by the freight classification.
2. Packages composed of several light weight outer containers strapped together.
3. Packages with heavy weight contents where the bursting thrust is excessive.
4. Packages to be safeguarded against pilferage.
5. Odd shaped containers.
6. Export boxes.

There are three principal steel strapping systems applicable to fibre containers. The straps are tightened and sealed by various methods. Omitting the technicalities of these methods as outside the province of this article, it will suffice to say that the ends of the strap are usually clamped together with some sort of separate metal seal. This seal can often be lithographed with the shipper's name or embossed with his package number, thus affording a positive identification and seal. In one make the straps when crossed can be sealed at the intersection in an interlocking combination which prevents side slipping. Some makes have separate tools for applying tension, crimping the seal and cutting the strap. At least one style does all these operations with a single tool. Perhaps the latest development is the use of spot welding for joining the ends of straps, in place of crimping with a seal.

As regards the strap itself, many experiments have shown ⅜ in.-0.015 metal is best for fibre containers. Straps less than ⅜ in. in width have a tendency to cut through the board and the gain in this matter from using greater widths than ⅜ in. is not commensurate with the increased cost. The straps naturally cannot be applied as tightly as in the case of wooden containers, but should be tightened just sufficiently to bite into the edges, so that they will not slip sideways. This, by the way, is the big disadvantage of cord.

When the contents are of a hard, solid nature, the strap should, of course, be drawn tighter than in the case of loosely fitting or fragile contents, as this serves to tie the contents together in such a way that they will resist a surprising amount of rough handling, even after the container itself has started to break. Where the contents are of a fragile or yielding nature, it is often worth while to slip buffers of corrugated or fibre board under the strap at the edges.

Fibre containers are usually sealed with adhesive or tape, or both, before applying strapping. Strapping alone can be used, however, especially when the outer flaps have plenty of overlap and the contents are solid and firm, such as canned goods. The use of wax seals on valuable contents, such as silverware, can also be dispensed with when straps are used.

The regular slotted carton style is often strapped but it is usually preferable to have the outside flaps made with a 1-in. overlap. This is particularly true if no adhesive is used. Long boxes opening at the ends (such as for automobile bumpers) should have a full overlap. Another popular style is the "full telescope," as the depth can be varied while the straps will still keep the contents from shifting. The three-piece box is also well adapted to strapping. The body of this box consists of an open-end tube and the ends are formed by telescope covers extending two or three inches over the sides. If necessary the depth can be varied by cutting down the body. Two crossed metal straps provide all the sealing needed.

Often several relatively small corrugated or fibre containers are strapped together to make an easily handled shipping unit, to give added protection to fragile contents or to reduce transportation costs.

The minimum weight for express shipments is ten pounds. By strapping several of these boxes together, expressage is paid only on the actual weight shipped. Several sizes of boxes are often strapped together and "lot shipments" arrive at destination intact with no lost sheep "to follow." Because of the light weight, no wooden ends nor fibre buffers are necessary. Two straps, crossed, are used.

Dead weight articles, such as bolts and nuts, are always expensive to pack. When dropped, the box often breaks with explosive force. Metal strapping is a valuable reinforcement in such instances.

Concealed losses due to pilfering run into large sums annually, although marked reductions in these losses have been made during the past few years and much of this reduction is due to the use of sealed metal strapping.

Many objects are difficult to pack because of their odd shape and when packed it is sometimes difficult to seal the container and to deliver it to destination in good condition. In such cases the proper use of steel strapping often solves the problem.

Automobile bumpers are usually shipped in long, narrow, solid fibre containers either end-opening or "five panel wrap" style. Both of these are difficult to seal with the usual methods and for this reason metal strapping is nearly always used to close these packages. When drawn up tight, the straps keep the heavy bumpers from punching through the ends of the package.

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Gummed Tape

One subject on which the public, from box manufacturers and tape mills to shipping clerks and packers, need instruction, is how to get proper results from sealing tape. Many mistaken notions are prevalent. The result is that many shippers get better results from sealing tape than from any other form of closure, while there are other concerns whose taped packages are not effective.

To make taped fibre shipping cases safe, it is of utmost importance to make the gummed tape stick tightly. To do that the tape must be *correctly moistened.* Unfortunately, this important factor of tape moistening is often neglected in shipping rooms and also by those higher up, who do not realize its value in preventing damage to or loss of goods in transit.

When a strip of sealing tape has been applied to a carton or package, it should stick so tightly that it becomes practically a part of the container itself. Moreover, the tape must stick over its entire surface, not just in spots here and there; as that would seriously weaken the package.

To accomplish this is easier said than done. Devising a machine which will invariably deliver strips of tape moistened just right, and over the entire surface of the tape, has proved to be far more difficult than was at first expected.

Let us consider a moment what a good tape moistening machine must do. During rush hours in shipping rooms, packages and cases are sealed at top speed. Each lineal inch of tape touches the moistening element about one-fortieth of a second of time. The "first time over" must do the job correctly or not at all. The tape is slapped on the carton, rubbed with one or two quick motions—and in that brief instant it must grip tightly enough to hold the container, if necessary, during a trip across the continent. The box will not stand quietly on a shelf for several weeks, but will get rough handling. The crushing and scraping in transit frequently pulls nails out of wooden shipping cases, yet tape must not work loose. It must *stay* stuck.

The safest plan is to use only thoroughly reliable tape dispensers. The best machines are those which eliminate the human factor from moistening entirely, making the operation of the moistening unit of the machine entirely automatic.

No matter what type of moistening device a shipper may choose, the main thing to remember is the great importance of the moistening operation in making a safe shipping container out of corrugated box or the paper wraper, as the case may be. The value of the merchandise and ordinary corrugated box runs from $1 to $20. Mostening the tape can never cost more than a tenth of a cent, but that fraction of a cent can make all the difference between losing the $20 merchandise or having it arrive safely and in good condition when it reaches its final destination.

The glue of various brands of gummed tape varies, especially as regards solubility. A little study will show the proper amount of moistening for any one make. Too much water may remove a very soluble glue and lead to blisters, while not enough water may fail to soften a harder glue. Some tapes have such hard glue that complete immersion works best. Only first class moisteners should be used. Heavy kraft paper tape, while strong, is stiff and difficult to adhere properly and thoroughly. A very thin tape is more foolproof but weaker. For these reasons gummed cambric makes a wonderful seal besides being very resistant to tearing and friction. However, it can be easily peeled off by a thief and a fresh piece replaced, so for this reason the railroads have recently forbidden its use in sealing. Well-adhered kraft cannot be removed without tearing.

Springy flaps will cause tape to slip a little before the glue has set, resulting in looseness and wrinkled tape. This can be overcome by first folding the flaps inward or by holding them down hard until the glue has set or can be done mechanically by slipping the freshly sealed box under a home-made adjustable wedge-shaped board or frame which will hold the flaps of one box down until it is pushed on by the next box.

Many shippers run the tape 6 in. down the ends of the box or even all around. The Classification calls for 2½ in., and if properly applied this is enough. In one instance a shipping room placed an average of 6 in. of 3-in. tape down the ends of the box and turned out 200 boxes a day. Reducing this to 2½ in. made a saving of $435 a year. In most cases, where 2-in. tape is indicated under the rules, this width, properly applied, is ample.

Many shippers use tape and adhesive together when the latter is sufficient to meet railroad requirements. From a carrying standpoint adhesive alone is ample but the extra tape may be worth while as an identifying seal or as insurance against inefficient labor. One firm made a saving of $2230 a year by omitting this extra tape which was being used through ignorance of the Classification requirements.

Wooden Boxes

There are seven forms of nailed wooden boxes so universally used that they may be called the standard style of nailed boxes. These boxes can be adapted to a wide range of uses, and it is the experience of the Forest Products Laboratory that in meeting the majority of packing problems they are the most efficient of the nailed boxes. The advantages and disadvantages of each style, as revealed in laboratory tests and observation of boxes in commercial service, are given below.

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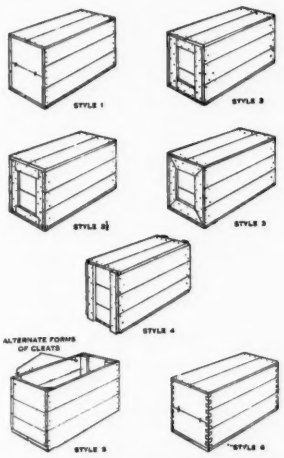
In Style 1, the grain of the ends and sides runs approximately parallel to the top and bottom surfaces. One of the common failures in this type of box is splitting of the ends and sides, or failure of the joints in these parts, since the only resistance to such failure lies in the strength of the joints, if present, or in the strength of the wood in tension across the grain, which is not large and is extremely variable in any species of wood. The smaller holding power of nails driven into end grain as compared with side grain is another source of weakness.



To improve on Style 1 ends, and guard against the liability of complete failure from splitting of ends and sides, rectangular and sometimes triangular corner cleats nailed or stapled to the inside of the end (Style 5) are added when the character of the contests permits. This construction does not increase the displacement of the box and is, therefore, not objectionable in that respect. If these cleats can be made large enough, the sides may also be nailed to them, which, of course, increases the strength of the nailing at this point. These inside cleats should be shorter than the inside depth of the box, so that if the sides and ends shrink, the cleats will not cause an opening of the joints. In all boxes with cleated ends, the nails or staples holding the cleats to the ends should be long enough to permit a good clinch, and should be spaced approximately the same as the nails in the adjacent edges of the wooden box.

The most common method of preventing box ends from splitting and of supplementing the holding power of nails driven into the end grain is the addition of two outside cleats on each end as shown in Style 4. These cleats should be of the same thickness as the end, so that when setting up the box the same size of nail may be used in them. The nails should be staggered in the ends and cleats; this permits a closer spacing of the nails and results in a stronger joint than is obtained by driving the nails in a single row. The holding power of the nails is supplemented most effectively by the use of denser woods as applied to the box for ends and cleats.

The cleats in Style 4 boxes should be long enough to come nearly flush with the outer surfaces of the top and bottom. They will thus aid in keeping the top and bottom in place and will also take some of the thrust which comes on the nails in the top and bottom when the box is dropped on a corner. If the cleats are made to come exactly flush with the outer surfaces of the top and bottom, and shinkage occurs later, it may cause the ends of the cleats to project beyond the top and bottom, and they may be pulled loose if the box is handled so that they catch on some object. The amount that the cleats should be cut short to allow for shrinkage depends on the moisture content of the lumber at the time the box is constructed and the storage conditions afterward. Usually an allowance of from ⅛ to 3/16 in. at each end will be sufficient.

The addition of the two horizontal cleats in Styles 2, 2½ and 3 permits a reduction in the thickness of the end boards from the thickness of the cleats to that of the sides, top and bottom, in which case all the nails should be driven into the cleats. Or the cleats and end boards may be the same thickness and the nails staggered in two rows. The usual failures in these styles of boxes are pulling of the nails from ends and cleats, shearing out of the nails to the ends of the sides, top and bottom, and splitting of the end boards along the inner edges of the horizontal cleats, which allows a cleat with part of the end board to pull away with the top or bottom. The resistance to failure by splitting of the end is due to the strength of the end board in tension across the grain, supplemented by the action of the vertical cleats. In nailing or stapling the vertical cleats to the ends in Styles 2 and 2½, it is possible to get more nails near the top and bottom edges of the box than in the mitered cleats of Style 3. This more effectively prevents the box end from splitting along the horizontal cleats.

Style 2½ has the advantage that when the bottom and top are being nailed to the cleats, the notches or steps in the vertical cleats will take the thrust that otherwise would come on the nails holding the horizontal cleats. This thrust is sometimes very severe, especially when several nails are driven at the same time into a cleat made of dense wood.

In manufacturing boxes with square ends, Style 3 has the advantage that all four cleats are the same length, hence interchangeable. When a very symmetrical end is desired, rather than the strongest end, the mitered cleats are always to be preferred.

The box shown in Style 6 has sides and ends joined together by a series of tenons, called "locks," which interlock and are held together by gluing. The top and bottom are usually fastened by nailing. The lock corner, if properly glued, gives a more rigid box than nailed corners, there being no appreciable dis-

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tortion before failure occurs. Tests show that many failures in lock-corner boxes occur because ends and side split, nails pull from or split the edges of too thin ends, locks open and matched joints lack sufficient strength.

The Plywood Box

Plywood is a combination of two or more thin sheets of lumber glued together, with the grain of one ply at right angles to the adjacent face or faces, and therefore tends to equalize the strength parallel and across the grain. For that reason the thickness of the lumber used in the body of the box may be reduced as much as 75 per cent without any loss whatever in its serviceability.

Lumber does not shrink with the grain, but across the grain. It shrinks about 8 per cent from a green to a dry condition. If dry and subjected to humid conditions it swells. The shrinking or swelling of plywood in length and width, due to the cross banding of the grains, is so minimized that it is of no consequence and the warping and twisting of the plywood panels in boxes is eliminated.

Plywood adds to the complications of manufacture of wood boxes. The sheets of veneer of a predetermined size are cut from logs on very powerful lathes. This veneer is then kiln dried in large kilns which operate continuously night and day. The material is next taken to the gluing-up room, where glue is spread upon the surface by a mechanical spreader. The glued veneer sheets are then placed in a hydraulic press with heavy three-ply oak boards inserted between each of several layers, and a heavy pressure is applied. This pressure holds the panels perfectly flat and is maintained for a period of hours by the use of turnbuckles and I-beams applied while the wood is in the press. After the panels are thoroughly dried, they are trimmed to the desired size and are either nailed by nailing machines or stapled by large staplers driving long metal staples through the veneer into the reinforcing cleats.

Plywood boxes may be made in a variety of styles. Each box part is marked, indicating whether it be the end, side, top or bottom, and as each box part is complete, there are but six pieces or parts to be nailed together, thus simplifying assembling.

The thicknesses most generally used are 3/16 in. and ¼ in., these being substituted for lumber up to 1 in. in thickness. It is possible, however, to make plywood in greater thicknesses or more plies than three, where conditions require.

The uses of plywood boxes are infinite. Plywood cases are used for cottons, woolens, prints, worsteds, blankets, yarns, hosiery, underwear, silks, gloves, corsets, shoes, buttons, soap, confectionery, silverware, rubber goods and wherever a wooden box is required. Special cases are made for talking machines, tires, silverware, boots and shoes, hats and other articles.

Plywood barrels or drums, which have recently made their appearance in the package field, are exceptionally good containers, either for shipping or for storage. They are strong, sturdy, tough and dependable; yet, at the same time, they are light in weight, compact and efficient; they are easy to handle; their light weight reduces freight, express, and other transportation and handling charges; they are adaptable to a wide range of uses; they can be made in any practical size, and can be reused many times.

The Wirebound Box

The wirebound box is a scientifically constructed shipping container made with light but strong wooden frames and thin, tough boards integrally bound together with two or more strands of steel wire stapled to the sides, top, bottom and frames so as to produce a foldable box-blank into which, after folding, the separate ends are inserted and stapled or nailed in position. This box, in its knocked-down form, consists of only three separate parts, the box-blank and the two ends; the box-blank, or mat, comprises the consecutive faces, side, bottom, side, top, to each of which their respective cleats are attached, and all of which are connected by the continuous steel binding wires.

They are, therefore, easy to set up, strong, sturdy, tough and dependable; yet, at the same time, they are light in weight, compact and efficient. The frames and boards protect and cushion the contents of the boxes while the steel wires carry the load. Their greater strength gives greater protection. Being resilient, they absorb the shocks of transportation without transmitting them to their contents, thereby reducing breakage and damage claims to minimum. They safely carry usual boxed commodities up to 600 lbs., and some products as high as 2,000 lbs. No additional strapping or banding is required on wirebound boxes; the steel binding wires which are a component part of the box are in reality wire strapping. The cost of setting up the wirebound box is low; having only three pieces to assemble, the confusion of matching up loose parts is eliminated, and it takes but little time to set up.

When packed and closed, the cleated frames form natural hand holds. Wirebound boxes stack without crushing in warehouse, platform, car or truck; the frames of the boxes, not the contents, support the load. They can be quickly and securely closed; when properly sealed by correctly twisting together the ends of the binding wires, concealed losses are eliminated and common pilferage is reduced to minimum. Their light weight, extraordinary carrying qualities and ease of handling hold transportation and handling charges at minimum cost.

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Carr-Lowrey Glass Co., Baltimore, Md.
Fairmont Glass Works, Inc., Indianapolis, Ind.
Foster-Forbes Glass Co., Marion. Ind.
General Glass Co., Lancaster, O.
Glenshaw Glass Co., Glenshaw, Pa.
Hamilton Co., J. T. & A., Pittsburgh, Pa.
Hart Glass Mfg. Co., Dunkirk, Ind.
Hazel-Atlas Glass Co., Wheeling, West Va.
Imperial Glass Corp., Chicago, Ill.
Latchford Glass Co., Huntington Park, Calif.
Maryland Glass Corp., Baltimore, Md.—Insert 208-209
Owens-Illinois Glass Co., Toledo, O.—210-211
Swindell Brothers, Baltimore, Md.
Wheaton Co., T. C., Millville, N. J.
Whittall-Tatum Co., Millville, N. J.

BOTTLES, FOOD PACKING

Ball Bros., Muncie, Ind.
Brockway Machine Bottle Co., Brockway, Pa.
Capstan Glass Co., Connellsville, Pa.
Carr-Lowrey Glass Co., Baltimore, Md.
Fairmont Glass Works, Indianapolis, Ind.
General Glass Co., Lancaster, O.
Glenshaw Glass Co., Glenshaw, Pa.
Hart Glass Mfg. Co., Dunkirk, Ind.
Hazel-Atlas Glass Co., Wheeling, West Va.
Maryland Glass Corp., Baltimore, Md.—Insert 208-209
Olean Glass Co., Olean, N. Y.
Owens-Illinois Glass Co., Toledo, O.—210-211
Reed Glass Co., F. E., Rochester, N. Y.
Salem Glass Works, Salem, N. J.
Tygart Valley Glass Co., Washington, Pa.

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For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

BOTTLES, MILK (Glass)

Buck Glass Company, Baltimore, Md.
Hamilton Co., J. T. & A., Pittsburgh, Pa.
Knox Glass Bottle Co., Knox, Pa.
Lamb Glass Co., Mt. Vernon, O.
Liberty Glass Co., Sapulpa, Okla.
Owens-Illinois Glass Co., Toledo, O.—210-211
Reed Glass Co., F. E., Rochester, N. Y.
Thatcher Mfg. Co., Elmira, N. Y.
Three Rivers Glass Co., Three Rivers, Texas
Universal Glass Products Co., Parkersburg, West Va.

BOTTLES, PAPER

American Paper Bottle Co., Toledo, O.
Burt Co., Ltd., F. N., Buffalo, N. Y.
Lily Tulip Cup Corp., New York, N. Y.
Mono Service Co., Newark, N. J.
Purity Paper Vessels Co., The, Baltimore, Md.
Ritchie & Co., W. C., Chicago, Ill.—287
Russell Box Co., Medford, Mass.—284-285
Sealright Co., Inc., Fulton, N. Y.
Smith-Lewis Fibre Can Corp., Lowville, N. Y.

BOTTLES, PROPRIETARY AND GENERAL

American Glass Works, Richmond, Va.
Brockway Machine Bottle Co., Brockway, Pa.
Carr-Lowrey Glass Co., Baltimore, Md.
Fairmont Glass Works, Indianapolis, Ind.
Foster-Forbes Glass Co., Marion, Ind.
Gayner Glass Works, Salem, N. J.
General Glass Co., Lancaster, O.
Glenshaw Glass Co., Glenshaw, Pa.
Hagerty Bros. & Co., New York, N. Y.
Hamilton Co., J. T. & A., Pittsburgh, Pa.
Hart Glass Mfg. Co., Dunkirk, Ind.
Hazel-Atlas Glass Co., Wheeling, West Va.
Kimble Glass Co., Vineland, N. J.—189
Knox Glass Bottle Co., Knox, Pa.
Maryland Glass Corp., Baltimore, Md.—Insert 208-209
Owens-Illinois Glass Co., Toledo, O.—210-211
Pennsylvania Glass Products Co., Pittsburgh, Pa.
Pierce Glass Co., Port Allegany, Pa.
Reed Glass Co., F. E., Rochester, N. Y.
Salem Glass Works, Salem, N. J.
Swindell Brothers, Baltimore, Md.
Three Rivers Glass Co., Three Rivers, Texas
Wheaton Co., T. C., Millville, N. J.
Whitall-Tatum Co., Millville, N. J.

BOX BOARD, ASPHALT LINED

Gair Co., Inc., Robt., New York, N. Y.
Sisalkraft Co., Chicago, Ill.

BOX BOARD, CLAY-COATED

American Coating Mills, Elkhart, Ind.
Container Corp. of America, Chicago, Ill.—140
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Gair Co., Robert, New York, N. Y.
Lowe Paper Co., Ridgefield, N. J.—Insert 188-189
National Folding Box Co., New Haven, Conn.
United Paperboard Co., Inc., New York, N. Y.
Wabash Coating Mills, Wabash, Ind.

BOX BOARD, FOLDING

Alton Box Board & Paper Co., Alton, Ill.
American Coating Mills, Elkhart, Ind.
Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Cherry River Paper Co., Philadelphia, Pa.
Chesapeake Paperboard Co., Baltimore, Md.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill.—140
Federal Paperboard Co., Inc., Bogota, N. J.
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Harris Importing & Exporting Co., Glens Falls, N. Y.
Hinde & Dauch Paper Co., New York, N. Y., Boston, Mass., Philadelphia, Pa., Baltimore, Md., Richmond, Va., Buffalo, N. Y., Cleveland, O., St. Louis, Mo., Kansas City, Kans., Toronto, Ont., Montreal, Que.
Lawless Bros. Paper Mills, East Rochester, N. Y.
Lowe Paper Co., Ridgefield, N. J.—Insert 188-189
Mac Sim Bar Paper Co., Otsego, Mich.
Marathon Paper Mills, Rothschild, Wis.
Mead Sales Co., Ltd., New York, N. Y.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
National Folding Box Co., New Haven, Conn.
National Metal Edge Box Co., Philadelphia, Pa.—204
Ohio Boxboard Co., Rittman, O.
Republic Paperboard Co., Cincinnati, O.
Robertson Paper Box Co., Montville, Conn.
Schmidt & Ault Paper Co., York, Pa.
Sutherland Paper Co., Kalamazoo, Mich.
United Paperboard Co., Inc., New York, N. Y.

BOX BOARD, FOLDING, METALLIC COATED

Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Lowe Paper Co., Ridgefield, N. J.—Insert 188-189
McLaurin-Jones Co., Brookfield, Mass.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
National Folding Box Co., New Haven, Conn.
New England Card & Paper Co., Springfield, Mass.
Paper Affiliates, Inc., New York, N. Y.
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Standard Textile Products Co., New York, N. Y.
United Mfg. Co., The, Springfield, Mass.

BOX BOARD, SET-UP

Alton Box Board & Paper Co., Alton, Ill.
Apollo Metal Works, La Salle, Ill.—127—(Metal For)
Butterfield-Barry Co., New York, N. Y.
Cherry River Paper Co., Philadelphia, Pa.
Chesapeake Paperboard Co., Baltimore, Md.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill.—140
Continental Paper Co., Bogota, N. J.
Downingtown Paper Co., Downingtown, Pa.
Franklin Board & Paper Co., Franklin, O.
Gair Co., Robt., New York, N. Y.
Lawless Bros. Paper Mills, East Rochester, N. Y.
McEwans & Sons, R. B., Whippany, N. J.
Mac Sim Bar Paper Co., Otsego, Mich.
Mead Sales Co., Ltd., New York, N. Y.
National Folding Box Co., New Haven, Conn.
Republic Paperboard Co., Cincinnati, O.
Sutherland Paper Co., Kalamazoo, Mich.
United Paperboard Co., Inc., New York, N. Y.

BOXES, CELLULOID, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195
Sillcocks-Miller Co., South Orange, N. J.—195

BOXES, CLOTHING and MILLINERY

Acme Folding Box Co., St. Louis, Mo.
American Paper Box Co., Grand Rapids, Mich.
Bartgis Bros. Co., Ilchester, Md.
Brown & Bailey Co., Philadelphia, Pa.
Climax Mfg. Co., Castorland, N. Y.
Container Corp. of America, Chicago, Ill.—140
Elkin Mfg. Co., Philadelphia, Pa.
Gardiner-Richardson Co., Middletown, O.
Lindley Box & Paper Co., Marion, Ind.
Morris Paper Mills, Chicago, Ill.
Natick Box & Board Co., Natick, Mass.
National Folding Box Co., New Haven, Conn.
National Metal Edge Box Co., Philadelphia, Pa.—204
Spear Box Co., New York, N. Y.
United Paperboard Co., New York, N. Y.

BOXES, CORRUGATED and SOLID FIBRE

Agar Manufacturing Corp., Whippany, N. J.

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For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

Albany Corrugated Container Corp., Albany, N. Y.
American Can Co., New York, N. Y.
American Corrugated Paper Products Corp., New York, N. Y.
American Corrugating Co., Grand Rapids, Mich.
Andrew Co., O. B., Chattanooga, Tenn.
Ashtabula Corrugated Box Co., Ashtabula, O.
Bankers Box Co., Chicago, Ill.
Bird & Son, Inc., East Walpole, Mass.
Bogota Paper & Board Co., Bogota, N. J.
Brack Container Corp., Rochester, N. Y.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill. —140
Corning Fibre Box Corp., The, Corning, N. Y.
Corrugated Container Co., Philadelphia, Pa.
Corrugated Container Corp., Columbus, O.
Crescent Box Corp., Philadelphia, Pa.
Densen Corrugated Paper Co., Ridgefield Park, N. J.
Dexter Folder Co., New York, N. Y.—141-152
Eggers-O'Flyng Co., Omaha, Neb.
Evans Fibre Box Co., Chicago, Ill.
Federal Container Co., Philadelphia, Pa.
Florida Container Corp., Tampa, Fla.
Fort Wayne Corrugated Paper Co., Fort Wayne, Ind.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., The, Middletown, O.
Gaylord Container Co., Atlanta, Ga.
Gaylord, Inc., Robert, St. Louis, Mo.
General Fibre Box Co.. Springfield, Mass.
Hercules Paper Box Co., Columbus, O.
Hinde & Dauch Paper Co., New York, N. Y., Boston, Mass., Philadelphia, Pa., Baltimore, Md., Richmond, Va., Buffalo, N. Y., Cleveland, O., St. Louis, Mo., Kansas City, Kansas, Toronto, Ont., Montreal, Que.
Hummel & Downing Co., Milwaukee, Wis.
Hunt-Crawford Co., The, Coshocton, O.
Inland Box Corporation, Indianapolis, Ind.
Jackson Box Co., The, Cincinnati, O.
Kieckhefer Container Corp., Milwaukee, Wis.
Kress Box Co., F. J., Pittsburgh, Pa.
Menasha Woodenware Co., Menasha, Wis.
Mengel Company, Louisville, Ky.
Mid-West Box Co., Chicago, Ill.
National Container Corp., Long Island City, N. Y.
National Metal Edge Box Co., Philadelphia, Pa.—204
New Orleans Corrugated Box Co., Inc., New Orleans, La.
Nivison-Weiskopf Co., The, Cincinnati, O.
Ohio Boxboard Co., Cleveland, O.
Ottawa River Paper Co., Toledo, O.
Owens-Illinois Glass Co., Toledo, O.—210-211
Pa Pro Co., The, Glenfield, N. Y.
Paraffine Companies, The, Inc., San Francisco, Cal.
River Raisin Paper Co., Monroe, Mich.
Rochester Folding Box Co., The, Rochester, N. Y.
Rockford Fibre Container Co., Rockford, Ill.
Schmidt Lithograph Co., San Francisco, Cal.
Schultz Co., A. Geo., Milwaukee, Wis.
Southern Container Co., Houston, Texas
Star Corrugated Box Co., Maspeth, L. I., N. Y.
Texas Corrugated Box Co., Dallas, Texas
Wabash Fibre Box Co., Terre Haute, Ind.
Waldorf Paper Products Co., St. Paul, Minn.
Warner Bros. Co., Bridgeport, Conn.—273
Weber & Co., David, Philadelphia, Pa.

BOXES, FANCY WOOD

Arrow Mfg. Co., Inc., Hoboken, N. J.—126
Artwood Products Co., Terre Haute, Ind.
New England Box Co., Greenfield, Mass.
Pilliod Cabinet Co., The, Swanton, O.—208
Ruechert Mfg. Co., Providence. R. I.
Veneered Products Corp., Grand Rapids, Mich.
Warner Bros. Co., Bridgeport, Conn.—273

BOXES, FOLDING AND DISPLAY CARTONS

Ace Carton Corp., Chicago, Ill.
Acme Folding Box Co., New York, N. Y.
Albert Paper Box Co., Inc., Brooklyn, N. Y.
American Carton Co., Brooklyn, N. Y.
Atlantic Carton Corp., Norwich, Conn.
Badger Carton Co., Milwaukee, Wis.
Bankers Box Co., Chicago, Ill.
Bloomer Bros. Co., Newark, Wayne County, N. Y.
Brooks Bank Note Co., Springfield, Mass.
Brooks & Porter, Inc., New York, N. Y.—276
Brown & Bailey Co., Philadelphia, Pa.
Campbell Paper Box Co., South Bend, Ind.
Central Carton Corp., Brooklyn, N. Y.
Chicago Carton Co., Chicago, Ill.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill. —140
Continental Folding Paper Box Co., Ridgefield, N. J.
Dennison Mfg. Co., Framingham, Mass.—179
Dodge Paper Box Co., E. F., Leominster, Mass.
Dowd Carton Co., M. S., Hartford, Conn.
Downingtown Paper Box Co., Downingtown, Pa.
Edwards & Deutsch Lithographing Co., Chicago, Ill.
Einson-Freeman Co., Inc., Long Island City, N. Y.—164-165
Empire Box Corp., Chicago, Ill.
Fitzhugh, Inc., Wm. W., Brooklyn, N. Y.
Forbes Litho. Mfg. Co., Boston, Mass.—Insert 196-197
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Fort Wayne Paper Goods Co., Fort Wayne, Ind.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Gebhart Folding Box Co., Dayton, O.
Gereke-Allen Carton Co., St. Louis, Mo.
Great Lakes Paper Box Co., The, Cleveland, O.
Howell & Co., F. M., Elmira, N. Y.
Hummel & Downing Co.. Milwaukee, Wis.
International Folding Paper Box Co., North Bergen, N. J.
International Printing Co., Indianapolis, Ind.
Interstate Folding Box Co., Middletown, O.
Lebanon Paper Box Co., Lebanon, Pa.—194
Lord Baltimore Press, Baltimore, Md.
Lowe Paper Co., Ridgefield, N. J.—Insert 188-189
Maryland Paper Box Co., Baltimore, Md.
Menasha Products Co., Menasha, Wis.
Milprint Products Corp., Milwaukee, Wis., and Philadelphia, Pa.
Milwaukee Paper Box Company, Milwaukee, Wis.—282
Morris Paper Mills, Chicago, Ill.
Myers, Inc., J. & P. B., Brooklyn, N. Y.
National Carton Co., Joliet, Ill.
National Folding Box Co., New Haven, Conn.
National Metal Edge Box Co., Philadelphia, Pa.—204
Paper Package Co., Indianapolis, Ind.
Pictorial Paper Package Corp., Aurora, Ill.
Randolph Box & Label Co., Chicago, Ill.
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Richardson-Taylor-Globe Corp., Cincinnati, O.—255
Robertson Paper Box Co., Inc., Montville, Conn.
Rochester Folding Box Co., Rochester, N. Y.
Rossetti Lithographing Co., New York. N. Y.
Russell Box Co., Medford, Mass.—284-285
Sample-Durick Co., Springfield, Mass.
Schmitt, Geo. & Co., Inc., Brooklyn, N. Y.
Schultz Co., A. Geo., Milwaukee, Wis.
Shoup-Owens Co., Hoboken, N. J.—277
Shuttleworth Carton Co., Inc., New York, N. Y.
Simplex Paper Box Corp., Lititz, Pa.
Stecker Paper Box Co., Detroit, Mich.
Sutherland Paper Co., Kalamazoo, Mich.
Trenton Folding Box Co., Trenton, N. J.
Universal Folding Box Co., Brooklyn, N. Y.
U. S. Printing & Litho. Co., Cincinnati, O.
Waldorf Paper Products Co., St. Paul, Minn.
Warner Bros. Co., Bridgeport, Conn.—273
Warren Box & Printing Co., South Boston, Mass.

BOXES, MAILING

Ace Carton Corp., Chicago, Ill.
Brown & Bailey, Philadelphia, Pa.
Buffington, F. H. Co., Providence, R. I.
Cambridge Paper Box Co., Cambridge, Mass.—139
Campbell Paper Box Co., South Bend, Ind.
Chicago Carton Co., Chicago, Ill.
Cin-Made Corp., Cincinnati, O.—173
Cleveland Container Co., Cleveland, O.—155

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For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill —140
Deisroth Co., Inc., W. H., Philadelphia, Pa.—161
Dodge Paper Box Co., E. F., Leominster, Mass.
Florida Cont. Corp., Tampa, Fla.
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Fort Wayne Paper Goods Co., Fort Wayne, Ind.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., The, Middletown, O.
Gaylord Cont. Co., Atlanta, Ga.
Gaylord, Inc., Robert, St. Louis, Mo.
Gebhart Folding Box Co., Dayton, O.
Gereke-Allen Carton Co., St. Louis, Mo.
Great Lakes Paper Box Co., The, Cleveland, O.
Hercules Paper Box Co., Columbus. O.
Hinde & Dauch Paper Co., The, New York, N. Y., Boston, Mass., Philadelphia, Pa., Baltimore, Md., Richmond, Va., Buffalo, N. Y., Cleveland, O., St. Louis, Mo., Kansas City, Kans., Toronto, Ont., Montreal, Que.
Illinois Carton & Label Co., Chicago, Ill.
Improved Mailing Case Co., New York, N. Y.
International Printing Co., Indianapolis, Ind.
Interstate Folding Box Co., Middletown, O.
Lord Baltimore Press, Baltimore, Md.
Maryland Paper Box Co., Baltimore, Md.
Mason Box Co., The, Attleboro Falls, Mass.
Milwaukee Paper Box Co., Milwaukee, Wis.—282
Molitor Box Company, Milwaukee. Wis.
Myers, Inc., J. & P. B., Brooklyn, N. Y.
National Folding Box Co., New Haven, Conn.
National Metal Edge Box Co., Philadelphia, Pa.—204
New Orleans Corr. Box Co., Inc., New Orleans, La.
Owens-Illinois Glass Co., Toledo, O.—210-211
Paper Canister Co., Inc., Fernwood, Delaware Co., Pa.
Paper Package Co., Indianapolis, Ind.
Richardson-Taylor-Globe Corp., Cincinnati, O.—255
Ritchie & Co., W. C., Chicago, Ill.—287
Sample-Durick Co., Springfield, Mass.
Schultz Co., A. Geo., Milwaukee, Wis.
Sears Paper Box Co., Merle, Danville, Ill.
Seeley Tube and Box Co., Newark, N. J.
Shoup-Owens Co., Hoboken, N. J.—277
Shuttleworth Carton Co., Inc., New York, N. Y.
Simplex Paper Box Corp., Lititz, Pa.
Southern Container Co., Houston, Texas
Texas Corrugated Box Co., Inc., Dallas, Texas
Trenton Folding Box Co., Trenton, N. J.
U. S. Printing & Litho. Co., Cincinnati, O.
Warner Bros. Co., Inc., Bridgeport, Conn. 273
Young Bros., Providence, R. I.

BOXES, METAL

American Can Co., New York, N. Y.
Anchor Cap & Closure Corp., Long Island City, N. Y.
Burdick & Son, Albany, N. Y.—178
Chase Brass & Copper Co., Waterbury, Conn.
Consolidated Safety Pin Co., Bloomfield, N. J. (Powder and rouge, lipsticks, compacts)—156
Continental Can Co., Inc., New York, N. Y.—Insert 140-141
Goertz & Co., A., Newark, N. J.
Heekin Can Co., Cincinnati, O.
Metal Package Corp., New York, N. Y.—172
Scovill Manufacturing Co., Waterbury, Conn.
Tin Decorating Co. of Baltimore, The, Baltimore, Md.—263

BOXES, METAL (Covered and Lined)

Arrow Mfg. Co., Inc., Hoboken, N. J.—126
Dennison Mfg. Co., Framingham, Mass.—179
Farrington Mfg. Co., Boston, Mass.

BOXES, MOLDED (Plastic)

Allen & Hills, Inc., Auburn, N. Y.—130
American Insulator Co., New Freedom, Pa.
American Record Corp., Scranton, Pa.—160
Auburn Button Works, Inc., Auburn, N. Y.
Bakelite Corp., New York, N. Y.—157
Boonton Molding Co., Boonton, N. J.
Celluloid Corp., New York, N. Y.
Chicago Molded Products Corp., Chicago, Ill.—153
Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.—176
Columbia Phonograph Co., Bridgeport, Conn.—278-279
Diemolding Corp., Canastota, N. Y.
Durite Plastics, Division of Stokes & Smith Co., Philadelphia, Pa.
General Plastics, Inc., North Tonawanda, N. Y.—166-167
Kurz-Kasch Co., Dayton, O.
Mack Molding Co., Wayne, N. J.
Northern Industrial Chemical Co., Boston, Mass.
Norton Laboratories, Inc., Lockport, N. Y.
Plastic Molding Co., Sandy Hook, Conn. —288
Resinox Corporation, New York, N. Y.—254
Reynolds Spring Co., Jackson, Mich.
Shaw Insulator Co., Irvington, N. J.
Synthetic Plastics, Inc., New York, N. Y.
Toledo Synthetic Products Co., Toledo, O.
Warner Bros. Co., Bridgeport, Conn.—273
Waterbury Button Co., The, Waterbury, Conn.—268

BOXES, PAPER SET-UP

Letters indicate general class of boxes manufactured:
A—Covering Machine-made Boxes.
B—Automatic Machine-made Boxes.
C—Hand-made Boxes.
D—Hand-made and Machine-made Boxes.
g.l.—Indicates manufacture of general line of boxes in the class specified, except certain types which are specialties or specialized in, such as Candy, Holiday, Face Powder, Perfumery, Carbon Paper, Jewelry, Cases and Shelf Boxes, Hinged Lid and Display, Slide Boxes, Cigarette Boxes, Mailing Boxes and special small boxes. These are indicated by name.

Alderman Paper Box Co., Rochester, N. Y.
A, B, C and D, g.l.
American Paper Box Co., Saginaw, Mich.
A, C and D, g.l.
Arrow Mfg. Co., Inc., Hoboken, N. J.—126
C, Jewelry, Specialties, g.l. Metal, satin lined
Atlas Paper Box Co., Chattanooga, Tenn.
A and B, g.l.
Bisler, Inc., G. A., Philadelphia, Pa.
A, B, C and D, candy and holiday
Box Craft Co., Cambridge, Mass.
A, B, C and D
Bristol Paper Box Co., Bristol, Va.
A, g.l.
Buedingen Co., Inc., Ferdinand, Rochester, N. Y.
A, C and D, g.l.
Buffington Co., F. H., Providnece, R. I.
A, g.l.
Burt Co., Ltd., F. N., Buffalo, N. Y.
A, B, C and D, face powder, perfumery, pill and drug, slide boxes, cigarette boxes
Cambridge Paper Box Co., Cambridge, Mass.—139
A, B, C, D, g.l., face powder, perfumery, pill and drug, slide, cigarette, candy, mailing
Campbell Paper Box Co., South Bend, Ind.
Casselman, Inc., T. and E., New York, N. Y.
A, B, C and D, g.l.
Danbury Square Box Co., The, Danbury, Conn.
A, C and D, g.l.
Deisroth Co., Inc., W. H., Philadelphia, Po.—161
A, B, C. D, g.l.
Dennison Mfg. Co., Framingham, Mass.—179
D—complete line of all types and specialties
Dodge Paper Box Co., E. F., Leominster, Mass.
C, D, g.l.
Doolittle Co., The E. J., Meriden, Conn.
A, C and D, g.l.
Du-Frank Corp., Brooklyn, N. Y.
g.l.
Eagle Paper Box Co., Detroit, Mich.
A, C and D, g.l.
Ettinger, Louis & Sons, Port Richmond, N. Y.
Excelsior Paper Box Factory, St. Louis, Mo.
A, B, C and D, g.l.
Fairchild Corp., E. E., Rochester, N. Y.
A, B, C and D, g.l.
Fisher Paper Box Co., Inc., Minneapolis, Minn.
A, B, C and D, g.l.
Fleisig, Inc., H., New York, N. Y.

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Fort Wayne Paper Box Co., Fort Wayne, Ind.
A, B, C and D, g.l.
Grand Rapids Paper Box Co.. Grand Rapids, Mich.
A, B, C and D, g.l.
Great Lakes Paper Box Co., The, Cleveland, O.
Great Western Paper Box Co., St. Louis, Mo.
A, B, C and D, g.l.
Hatch Co., C. F., Lowell, Mass.
A, B, C and D, g.l.
Henry Co., Ira L., Watertown, Wis.
A, C and D, g.l.
Hollywood Paper Box Corp., Hollywood, Cal.
A, B and D, g.l.
Holman Paper Box Co., St. Louis, Mo.
A, B and D, g.l.
Howell & Co., F. M., Elmira, N. Y.
A, B and D, g.l.
Illinois Paper Box Co., Chicago, Ill.
A, C and D, g.l.
Improved Package Co., New York, N. Y.
Face powder and candy
Jones Paper Box Co., Jesse, Philadelphia, Pa.
A, B, C and D, g.l.
Kalamazoo Paper Box Co., Kalamazoo, Mich.
A, B, C and D, g.l.
Kentucky Paper Box Co., Inc., Louisville, Ky.
A, B, C and D, g.l.
Keystone Box Co., Pittsburgh, Pa.
A, B, C and D, g.l.
Killian Co., George P., Washington, D. C.
A, B, C and D, g.l.
Kroeck Paper Box Co., Chicago. Ill.
A, g.l.
Landowne Co., J., Inc., Brooklyn, N. Y
D, g.l.
Lebanon Paper Box Co., Lebanon, Pa.—194
A, B, C and D, g.l.
Lorscheider-Schang Co., Rochester, N. Y.
A, B, C and D, g.l.
Manufacturers Box Co., Milwaukee, Wis.
Maryland Paper Box Co., Baltimore. Md.
A, B, D, g.l., Holiday, shelf
Mason Box Co., The, Attleboro Falls, Mass.
A, B, C and D, g.l.
Miller, W. P., Inc., Philadelphia, Pa.
A, B, C and D, g.l.
Milwaukee Paper Box Co., The, Milwaukee, Wis.—282
Molitor Box Co., Milwaukee, Wis.
A, B, C and D, g.l.
National Folding Box Co., New Haven, Conn.
National Metal Edge Box Co., Philadelphia, Pa.—204
B, D, g.l.
Neumann Co., The Robert, Cincinnati, O.
A, C and D, g.l.
Norristown Box Co., Norristown, Pa.
A and B, g.l.
Ohio Boxboard Co., Cleveland, Ohio
A, B, C and D, g.l.
Paper Package Co., Indianapolis, Ind.
A, B, C and D, g.l.
Pearson Paper Box Co., Kansas City, Mo.
A, C and D, g.l.
Perfumers & Jewelers Box Co., New York, N. Y.
A, B, C and g.l.
Pharmacy Paper Box Co., Chicago, Ill.
A, B and C
Pictorial Paper Package Co., Aurora, Ill.
A, B, C and D, g.l.
Plumly, E. K., Philadelphia, Pa.
D, g.l., Perfume
Randolph Paper Box Co., Richmond, Va.
A, B and D, g.l.
Rapid Cutting Die Co., Brooklyn, N. Y.
A, B, g.l.
Ritchie & Co., W. C., Chicago, Ill.—287
A, B, C and D, g.l.
Rowell Co., Inc., E. N., Batavia, N. Y.
A, B and D, g.l.
Rubin, Jas. & Sons, Inc., Brooklyn, N. Y.
A, B and g.l.
Schall & Co., New York, N. Y.
Confectionery
Schleicher Paper Box Co., F. J., St. Louis, Mo.
B, C and D, candy
Schoettle Co., Edwin J., Philadelphia, Pa.
A, B, C and D, g.l.
Schultz & Co., H., Chicago, Ill.
A, B, C and D, g.l.
Schultz Co., A. Geo., Milwaukee, Wis.
A, B, C and D, g.l.
Sears Paper Box Co., Merle, Danville, Ill.
A, B, C and D, g.l.
Seeley Tube and Box Co., Newark, N. J.
A, B and D, g.l.
Shoup-Owens Co., Hoboken, N. J.—277
B and g.l.
Simplex Paper Box Corp., Lititz, Pa.
Spitzer Paper Box Co., Toledo, O.
A, B
Star Case Co., New York, N. Y.
C, Jewelry, specialties
Stecker Paper Box Co., Detroit, Mich.
Trum, Inc., E. J., Brooklyn, N. Y.
A and D, g.l.
United Paper Box Co., Chicago, Ill.
Voss Corp., Karl, Hoboken, N. J.—277
Face powder, perfumery, g.l.
Waldeck & Co., Jersey City, N. J.
A, B, C and D, g.l.
Warner Bros. Co., Bridgeport, Conn.—273
A, B, C and D
Waterbury Paper Box Co., Waterbury, Conn.—267
A, B, C and D, g.l.
Wing Paper Box Co., Hendersonville, N. C.
g.l.
Young Bros., Providence, R. I.
A, B, C and D, g.l.
Youse, C. J., Co., Baltimore, Md.
A, B, C and D, candy

BOXES, WINDOW
(Transparent Cellulose)

Brooks & Porter, Inc., New York, N. Y.—276
Deisroth Co., Inc., W. H., Philadelphia, Pa.—161
Dennison Mfg. Co., Framingham, Mass.—179
Empire Box Corp., Chicago, Ill.
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Gair Co., Robert, New York, N. Y.
Interstate Folding Box Co., Middletown, O.
Milprint Products Corp., Milwaukee, Wis., & Philadelphia, Pa.
Rapid Cutting Co., Inc., Brooklyn, N. Y.
Ritchie & Co., W. C., Chicago, Ill.—287
Russell Box Co., Medford, Mass.—284-285
Shoup-Owens, Inc., Hoboken, N. J.—277
Voss Corp., Karl, Hoboken, N. J.—277
Warner Bros., Bridgeport, Conn.—273

BOX LACES

American Lace Paper Co., Milwaukee, Wis.
Milwaukee Lace Paper Co., Milwaukee, Wis.
Sayford Co., Inc., Frank M., Brooklyn, N. Y.
U. S. Lace Paper Works, Brooklyn, N. Y.

BOX REINFORCEMENT
(Strapping-Wire)

Acme Steel Co., Chicago, Ill.—125
American Steel & Wire Co., Chicago, Ill.
Gerrard Co., Inc., Chicago, Ill.
Parker Machine Works, Riverside, Cal.
Seneca Wire & Mfg. Co., Fostoria, O.
Signode Steel Strapping Co., Chicago, Ill.
Stanley Works, New Britain, Conn.
Tennant Sons & Co., C., New York, N. Y.

BOX RIBBONS (Ties, Tinsel, etc.)

Adirondack Tinsel Co., Hudson Falls, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Chicago Printed String Co., Chicago, Ill.
Freydberg Bros., New York, N. Y.
Hy-Sil Mfg. Co., Revere, Mass.
Milwuakee Printed String Co., Milwaukee, Wis.
National Tinsel Mfg. Co., Manitowoc, Wis.—205
Taft Co., R. C., Chicago, Ill.

BOX TOP PADDING

American Lace Paper Co., Milwaukee, Wis.
International Paper Co., New York, N. Y.
Kimberly-Clark Corp., Neenah, Wis.—190-191
Milwaukee Lace Paper Co., Milwaukee, Wis.
Sayford Co., Inc., Frank M., Brooklyn, N. Y.
Union Wadding Co., Pawtucket, R. I.

BOX WRAPS

See Lithographers and various paper headings

CADDIES, CRACKER
(Moisture-proof and Grease-proof)

Chicago Carton Co., Chicago, Ill.
Consolidated Paper Co., Monroe, Mich.

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Container Corp. of America, Chicago, Ill. —140
Dexter Folder Co., New York, N. Y.—141-152
Empire Box Corp., Chicago, Ill.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Gaylord Co., Robert, St. Louis, Mo.
Hinde & Dauch Paper Co., St. Louis, Mo. Kansas City, Kans., Toronto, Ont., Montreal, Que.
Hummel & Downing Co., Milwaukee, Wis.
International Printing Co., Indianapolis, Ind.
National Metal Edge Box Co., Philadelphia, Pa.—204
River Raisin Paper Co., Monroe, Mich.
Rochester Folding Box Co., Rochester, N. Y.
Sefton-National Fibre Can Co., St. Louis, Mo.—256

CANS, FIBRE

American Can Co., New York, N. Y.
Bloomer Bros. Co., Newark, Wayne County, New York State
Boothby Fibre Can Co., Boston (Roxbury), Mass.
Cambridge Paper Box Co., Cambridge, Mass.—139
Canister Co., The. Phillipsburg, N. J.
Chicago Paper Tube & Can Co., Chicago, Ill.
Cin-Made Corp., Cincinnati, O.—173
Cleveland Container Co., Cleveland, O.—155
Gates Paper Co., Ltd., Los Angeles, Cal.
Improved Mailing Case Co., New York, N. Y.
Marathon Paper Mills Co., Rothschild, Wis.
Menasha Products Co., Menasha, Wis.
Molitor Box Co., Milwaukee, Wis.
National Paper Can Co., Milwaukee, Wis.
Paper Canister Co., Philadelphia, Pa.
Pictorial Paper Package Corp., Aurora, Ill.
R. C. Can Company, St. Louis, Mo.—253
Ritchie & Co., W. C., Chicago, Ill.—287
Rowell & Co., Inc., E. N., Batavia, Ill.
Russell Box Co., Medford, Mass.—284-285
Seeley Tube and Box Co., Newark, N. J.
Sefton National Fibre Can Co., St. Louis, Mo.—256
Shoup-Owens, Inc., Hoboken, N. J.—277
Stecker Paper Box Co., Detroit, Mich.

CANS, TIN (Plain and Decorated)

Acme Can Co., Philadelphia, Pa.
American Can Co., New York, N. Y.
Burdick & Son, Inc., Albany, N. Y.—178
Clark Mfg. Co., J. L., Rockford, Ill.
Consolidated Fruit Jar Co., New Brunswick, N. J.
Consolidated Safety Pin Co., Bloomfield, N. J.—156
Continental Can Co., New York, N. Y.—Insert 140-141
Federal Tin Co., Baltimore, Md.
Giles Can Co., Chicago, Ill.
Heekin Can Co., Cincinnati, O.
Metal Package Corp., New York, N. Y.—172
National Can Co., Boston, Mass.
Robertson Steel & Iron Co., W. F., Springfield, O.
Tin Decorating Co. of Baltimore, The, Baltimore, Md.—263
Wilkes-Barre Can Co., Wilkes-Barre, Pa.

CANS, TRANSPARENT, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195

CAP LINERS

See Liners, Cap

CAPS, CROWN

Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133
Bond Manufacturing Corp., Wilmington, Del.—138
Consolidated Cork Corp.. Brooklyn, N. Y.
Crown Cap Manufacturing Co., Brooklyn, N. Y.
Crown Cork and Seal Co., Baltimore, Md. —162-163
Gutmann, Ferdinand & Co., Brooklyn, N. Y.
Hutchinson & Son, W. H., Chicago, Ill.
Illinois Cork Co., Chicago, Ill.
Mundet Cork Corp., Brooklyn, N. Y.—196
Re-Seal It Metal Corp., New York, N. Y.
Western Stopper Co., San Francisco, Cal.

CAPS (Metal), ALUMINUM, BRASS, TIN (Bottle and Jar)

Aluminum Company of America, New Kensington, Pa.
Anchor Cap & Closure Corp., Long Island City, N. Y.
Aridor Manufacturing Co., Chicago, Ill.
Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133
Bernardin Bottle Cap Co., Evansville, Ind.
Brass Goods Manufacturing Co., Brooklyn, N. Y.
Bridgeport Metal Goods Mfg. Co., Bridgeport, Conn.
Closure Service Corp., Toledo, O.—210
Columbia Specialty Co.. Baltimore, Md.
Consolidated Safety Pin Co., Bloomfield, N. J.—156
Crown Cork & Seal Co., Inc., Baltimore, Md.—162-163
Empire Metal Cap Co., Brooklyn, N. Y.
Fabart Instrument Co., Chicago, Ill.
Gutmann & Co., Ferdinand, Brooklyn, N. Y.
Hazel Atlas Glass Co., Wheeling, West Va.
Mattatuck Manufacturing Co., Waterbury, Conn.
National Seal Company, Brooklyn, N. Y.
Owens-Illinois Glass Co., Toledo, O.—210-211
Phoenix Metal Cap Co., Chicago, Ill.
Scovill Manufacturing Co., Waterbury, Conn.
Sterling, A. J., New York, N. Y.
Tin Decorating Co. of Baltimore, Baltimore, Md.—263
Waterbury Brass Goods Corp., Waterbury, Conn.
White Cap Co., Chicago, Ill.
Williams Sealing Corp., Decatur, Ill.
Wirz, Inc., A. H., Chester, Pa.—274-275

CAPS, MOLDED (Bottle, Jar & Tube)

Allen & Hills, Inc., Auburn, N. Y.—130
American Insulator Corp., New Freedom, Pa.
American Record Corp., New York, N. Y. —160
Anchor Cap & Closure Co., Long Island City, N. Y.
Aridor Co., Chicago, Ill.
Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133
Auburn Button Works, Inc., Auburn, N. Y.
Bakelite Corp., New York, N. Y.—157
Boonton Molding Co., Boonton, N. J.
Chicago Molded Products Corp., Chicago, Ill.—153
Closure Service Co., Toledo, O.—210
Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.—176
Columbia Phonograph Co., Bridgeport, Conn.—278-279
Durite Plastics, Division of Stokes & Smith Co., Philadelphia, Pa.
General Plastics, Inc., N. Tonawanda, N. Y.—166-167
Kurz-Kasch Co., The, Dayton, O.
Mack Molding Co., Little Falls, N. J.
Mundet Cork Corp., Brooklyn, N. Y.—196
Northern Industrial Chemical Co., Boston, Mass.
Norton Laboratories, Inc., Lockport, N. Y.
Plastic Molding Co., Sandy Hook, Conn. —288
Resinox Corp., New York, N. Y.—254
Reynolds Spring Co., Jackson, Mich.
Synthetic Plastics, Inc., New York, N. Y.
Toledo Synthetic Products, Inc., Toledo, O.
Waterbury Button Co., Waterbury, Conn. —268
Wheeling Stamping Co., Wheeling, West Va.

CAPS, PAPER

Cambridge Paper Box Co., Cambridge, Mass.—139
Cin-Made Corp., Cincinnati, O.—173
Cleveland Container Co., The, Cleveland, O.—155
Gates Paper Co., Ltd., Los Angeles, Cal.
R. C. Can Co., St. Louis, Mo.—253
Ritchie & Co., W. C., Chicago, Ill.—287
Sayford Co., Inc., Frank M., Brooklyn, N. Y.
Sefton National Fibre Can Co., St. Louis, Mo.—256

CAPS, VISCOSE, CELLULOSE

Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133
Celon Co., Madison, Wis.
Du Pont Cellophane Co., Cap-Viscose Division, New York, N. Y.
Parke-Davis Co., Detroit, Mich.

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CAPSULES, CELLULOID, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195

CARTON LINERS

Bennington Wax Paper Co., Bennington. Vt.
Central Waxed Paper Co., Chicago, Ill.
Du Pont Cellophane Co., New York, N. Y.
Hamersley Mfg. Co., Garfield, N. J.
Hartford City Paper Co., Hartford City, Ind.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Henle Wax Paper Mfg. Co., Inc., The, New York, N. Y.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193
Marathon Paper Mills, Rothschild, Wis.
McDowell Paper Mills, Philadelphia, Pa.
Menasha Products Co., Menasha, Wis.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Newark Paraffine & Parchment Paper Co., Newark, N. J.
Owens-Illinois Glass Co., Toledo, O.—210-211
Package Paper Co., Holyoke, Mass.
Paterson Parchment Paper Co., Passaic, N. J.—202
Reynolds Metals Co., Inc., New York, N. Y. —Insert 168-169
Rhinelander Paper Co., Rhinelander, Wis.
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Russell Box Co., Medford, Mass.—284-285
Specialty Paper Co., The, Dayton, O.
Sutherland Paper Co., Kalamazoo, Mich.
Sylvania Industrial Corp., New York, N. Y. —269-272
Traver Paper & Mfg. Co., Chicago, Ill.
Union Bag & Paper Co., New York, N. Y. —264
West Carrollton Parchment Co., West Carrollton, O.
Westfield River Paper Co., Russell, Mass.

CARTONS

See Boxes, Folding and Display

CARTONS, PARAFFINED

Atlantic Carton Corp., Norwich, Conn.
Bloomer Bros. Co., Newark, Wayne County, New York State
Butler Paper Products Co., Toledo, O.
Campbell Paper Box Co., South Bend, Ind.
Chicago Carton Co., Chicago, Ill.
Container Corp. of America, Chicago, Ill. —140
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Gereke-Allen Co., St. Louis, Mo.
Hummel & Downing Co., Milwaukee, Wis.
Menasha Products Co., Menasha, Wis.
Michigan Carton Co., Battle Creek, Mich.
Morris Paper Mills, Chicago, Ill.
National Carton Co., Joliet, Ill.
National Folding Box Co., New Haven, Conn.
Richardson-Taylor-Globe Corp., Cincinnati, O.—255
Russell Box Co., Medford, Mass.—284-285
Shuttleworth Carton Co., Inc., New York, N. Y.
Sutherland Paper Co., Kalamazoo, Mich.
Waldorf Paper Products Co., St. Paul, Minn.

CASE LINERS

Angier Corp., Framingham, Mass.
Brown Co., Portland, Me.
Central Paper Co., Muskegon, Mich.
Edgewater Paper Co., Menasha, Wis.
International Paper Co., New York, N. Y.
Rexford Paper Co., Milwaukee, Wis.
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Scutan Co., New York, N. Y.
Sisalkraft Co., Chicago, Ill.
Standard Textile Products Co., New York, N. Y.
Traver Paper & Mfg. Co., Chicago, Ill.
Union Bag & Paper Corp., New York, N. Y.—264

CASES, DISPLAY (Wood)

Arrow Mfg. Co., Inc., Hoboken, N. J.—126
Pilliod Cabinet Co., Swanton, O.—208

CASES, SAMPLE

Arrow Mfg. Co., Hoboken, N. J. (Wood & Metal, Covered & Lined)—126
Bridgeport Bag & Jewelry Case Co., Bridgeport, Conn.
Cambridge Paper Box Co., Cambridge, Mass.—139
Mason Box Co., Attleboro Falls, Mass.
Mele Mfg. Co., Inc., New York, N. Y.
Pilliod Cabinet Co., Swanton, O.—208
Ritchie & Co., W. C., Chicago, Ill.—287
Sperling, E., New York, N. Y.
Star Case Co., New York, N. Y.
Voss Corp., Karl, Hoboken, N. J.—277

CELLULOID

Auburn Button Works, Inc., Auburn, N. Y.
Celluloid Corp., New York, N. Y.
Columbia Phonograph Co., Bridgeport, Conn.—278-279
Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195
Sillcocks-Miller Co., The, South Orange, N. J.—195

CELLULOSE, SHREDDED

Bennington Wax Paper Co., Bennington, Vt.
Pioneer Paper Stock Co., Chicago, Ill.—209

CELLULOSE, TRANSPARENT (Converters and Printers)

Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Bennington Wax Paper Co., Bennington, Vt.
Birge & Sons Co., M. H., Buffalo, N. Y.—137
Bushell-Blendes, Inc., New York, N. Y.
Caton Printing Co., Kansas City, Mo.
Celluprint Co. of America, Inc., New York, N. Y.
Daniels Mfg. Co., Rhinelander, Wis.
Datz Co., A. S., Philadelphia, Pa.
Dennison Mfg. Co., Framingham, Mass.—179
Dobeckmun Co., The, Cleveland, O.—181
Forbes Litho. Mfg. Co., Boston, Mass.—Insert 196-197
Freydberg Bros., Inc., New York, N. Y.
Greene Co., Stephen. Philadelphia, Pa.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Humitube Mfg. Co., Peoria, Ill.
Liebs Co., Inc., L. A., New York, N. Y.
Marvellum Co., The, Holyoke, Mass.—Insert 204-205
Milprint Products Corp., Milwaukee, Wis., & Philadelphia, Pa.
Munson Bag Co., Cleveland, O.—198-199
Package Paper Co., Holyoke, Mass.
Shellmar Products Co., Chicago, Ill.
Traver Paper & Mfg. Co., Chicago, Ill.

CELLULOSE, TRANSPARENT (Moisture-proof and Grease-proof)

American Products Mfg. Co., New Orleans, La.
Celluloid Corp., New York, N. Y.
Du Pont Cellophane Co., New York, N. Y.
Eastman Kodak Co., Rochester. N. Y.
Sylvania Industrial Corp., New York, N. Y. 269-272

CHIPBOARD

Butterfield-Barry Co., New York, N. Y.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill. —140
Federal Paper Board Co., Inc., Bogota, N. J.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Kieckhefer Container Corp., Milwaukee, Wis.
Mead Sales Co., Ltd., New York, N. Y.
National Folding Box Co., New Haven, Conn.
Riegel Paper Corp., New York, N. Y.—Insert 252-253
River Raisin Paper Co., Monroe, Mich.
Schmidt & Ault Paper Co., York, Pa.
Traver Paper & Mfg. Co., Chicago, Ill.
United Paperboard Co., New York, N. Y.

CLOTH, LACQUERED

Athol Mfg. Co., Athol, Mass.
Carpenter Co., L. E., Newark, N. J.
Du Pont Fabrikoid Co., Newburgh, N. Y.

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Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Holliston Mills, Inc., The, Norwood, Mass.
Keratol Co., Newark, N. J.
Peerless Roll Leaf Co., Union City, N. J.
Permatex Fabrics, Inc., Jewett City, Conn.
Standard Textile Products Co., New York, N. Y.
Textileather Corp., Toledo, O.—262
Whiting Co., Inc., C. R., Hackensack, N. J.
Zapon Co., Hartford, Conn.

COLLAPSIBLE TUBES

See tubes, collapsible (aluminum, lead, tin & alloys)

COMPACTS, FANCY METAL CONTAINERS

Brass Goods Mfg. Co., Brooklyn. N. Y.
Bridgeport Metal Goods Mfg. Co., Bridgeport, Conn.
Consolidated Safety Pin Co., Bloomfield, N. J.—156
Goertz Co., Inc., August, Newark, N. J.
Kolmar Laboratories, Newark, N. J.
Majestic Metal Specialties, Inc., New York, N. Y.
Sagamor Metal Goods Corp., New York, N. Y.
Scovill Mfg. Co., Waterbury, Conn.

CONTAINERS, MOLDED PULP (Bottles, Jars, etc.)

Burt Co., Ltd., F. N., Buffalo, N. Y.
Holed-Tite Packing Corp., New York, N. Y.
Keyes Fibre Co., Inc., Waterville, Me.
Moulded Pulp Corp., Chicago, Ill.
Owens-Illinois Glass Co., Toledo, O.—210-211

CONTAINERS

See Various Bag & Box Headings

CONTAINERS, PAPER NESTING, WAXED AND UNWAXED

Individual Drinking Cup Co., Easton, Pa.
Lily Tulip Cup Corp., New York, N. Y.
Mono Service Co., Newark, N. J.
Russell Box Co., Medford, Mass.—284-285

CONTAINERS, SULPHITE CYLINDRICAL

Boothby Fibre Can Co., Boston (Roxbury), Mass.
Individual Drinking Cup Co., Easton, Pa.
Lily Tulip Cup Corp., New York, N. Y.
Purity Paper Vessels Co., The, Baltimore, Md.
Ritchie & Co., W. C., Chicago, Ill.—287
Sealright Co., Fulton, N. Y.
Smith-Lewis Fibre Can Corp., Lowville, N. Y.

CONTAINERS, SULPHITE NESTING

Lily Tulip Cup Corp., New York, N. Y.
Mono Service Co., Newark, N. J.
Russell Box Co., Medford, Mass.—284-285

CONTAINERS, TRANSPARENT, UNBREAKABLE, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195

CONVEYORS

Acme Steel Co., Chicago, Ill.—125
Alvey-Ferguson Co., Cincinnati, O.
Cambridge Wire Cloth Co., The, Cambridge, Md.
Chain Belt Co., Milwaukee, Wis.
Colton Co.. Arthur, Detroit, Mich.
Dodge Mfg. Co., Mishawaka, Ind.
Elgin Mfg. Co., Elgin, Ill.
Gifford-Wood Co., Hudson, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Kiefer Machine Co., The Karl, Cincinnati, O.
Lamson Co., Syracuse, N. Y.
Link-Belt Co., Chicago, Ill.
Logan Co., Louisville, Ky.
Mathews Conveyor Co., Ellwood City, Pa.
Sandvik Conveyor Mfg. Co., Inc., Newark, N. J.
Standard Conveyor Co., N. St. Paul, Minn.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
U. S. Bottlers Machinery Co., Chicago, Ill.—265

CORK PAPER

Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133

CORKS

American Cork Co., Boston, Mass.
Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133
Cork Import Corp., New York, N. Y.
International Cork Co., Brooklyn, N. Y.
Mundet Cork Corp., Brooklyn, N. Y.—196
Owens-Illinois Glass Co., Toledo, O.—210-211
Truslow & Fulle, Brooklyn, N. Y.

CORKS, ALUIMNUM CAPPED

Consolidated Fruit Jar Co., New Brunswick, N. J.

CORKS, MOLDED TOPS

Mundet Cork Corp., Brooklyn, N. Y.—196

CORKS, WOOD TOP, EMBOSSED

Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133

COUNTER DISPLAY

See Boxes, Folding Display Cartons
See Boxes, Molded Plastics
See Lithographers

CREPE WADDING

International Paper Co., New York, N. Y.
Kimberly-Clark Corp., Chicago, Ill.—190-191

DECALCOMANIA

Meyercord Co., Chicago, Ill.
Palm, Fechteler & Co., New York, N. Y.

DISPLAY CABINETS (Small, Wood)

Arrow Mfg. Co., Hoboken, N. J.—126
Pilliod Cabinet Co., Swanton, O.—208

DISPLAY RACKS, METAL (Counter, Floor and Window)

American Can Co., New York, N. Y.
City Wire Frame Co., Chicago, Ill.
Continental Can Co., New York, N. Y.—Insert 140-141
Kerr Wire Products Co., Chicago, Ill.—188
Sommer Bros. Appliance Co., Saginaw, Mich.
Tin Decorating Co. of Baltimore, The, Baltimore, Md.—263
Union Steel Products Co.. Albion, Mich.
United Steel & Wire Works, Battle Creek, Mich.

DROPPERS, BOTTLE, MEDICINAL

Anchor Cap & Closure Corp., Long Island City, N. Y.
Pennsylvania Glass Products Co., Pittsburgh, Pa.
Spring Stopper Co., New York, N. Y.

DROPPERS, MEDICINAL, UNBREAKABLE, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195

DRUMS, FIBRE

Arvey Mfg. Co., Chicago, Ill.
Buffalo Carpenter Container Co., Inc., Buffalo, N. Y.
Carpenter Container Corp., Brooklyn, N. Y.
Champion Container Co., Philadelphia, Pa.
Container Co., The, Van Wert, O.
Emery Carpenter Container Co., Chicago, Ill.
Gardner-Richardson Co., Middletown, O.
Master Package Corp., Owen, Wis.
Morris Paper Mills, Chicago, Ill.
National Folding Box Co., New Haven, Conn.
Philadelphia Carpenter Container Co., Inc., Philadelphia, Pa.

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ENVELOPES

See Various Bag Listings

ENVELOPE LININGS

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EXCELSIOR, PADS

Boston Excelsior Co.. New York, N. Y.
Excelsior Wrapper Co., Chicago, Ill.
Pioneer Paper Stock Co., Chicago, Ill.—209
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Bennington Wax Paper Co., Bennington, Vt.
Crystal Tissue Co., Middletown, O.
Paterson Parchment Paper Co., Passaic, N. J.—202
Pioneer Paper Stock Co., Chicago, Ill.—209
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FOIL, ALUMINUM, TIN, LEAD AND COMPOSITION

Aluminum Co. of America, Pittsburgh, Pa.
Hirst Co., Adolphe, New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Milprint Products Co., Milwaukee, Wis., & Philadelphia, Pa.
Pauli Corp, Karl, New York, N. Y.
Reynolds Metals Co., New York, N. Y.—Insert 168-169

FOLDING BOXES

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GAUGES, PAPER

Cady Co., E. J., Chicago, Ill.
Federal Products Corp., Providence, R. I.
Foreign Paper Mills, Inc., New York, N. Y.
Perkins & Son, Inc., B. F., Holyoke, Mass.
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GLASSES, MEDICINAL

Kimble Glass Co., Vineland, N. J.—189
Maryland Glass Co., Baltimore, Md.—Insert 208-209
Pennsylvania Glass Products Co., Pittsburgh, Pa.
Owens-Illinois Glass Co., Toledo, O.—210-211

GLUES AND PASTES

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GLUE HEATERS AND GLUE POTS

Beckwith Machine Co., Ravenna, O.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Gane Bros. & Lane, Inc., Chicago, Ill.
Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
New Advance Machinery Co., Van Wert, O.
Potdevin Machine Co., Brooklyn, N. Y.

GOLD LEAF

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GUMMED TAPE (Cloth)

Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Atlas Label Co., Chicago, Ill.
Central Paper Co., Menasha, Wis.
Chicago Gummed Tape Co., Chicago, Ill.
Crowell Corp., Yorklyn, Del.
Datz & Son, A. S.. Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
Gummed Products Co., The, Troy, O.
Gummed Tape & Devices Co., Brooklyn, N. Y.
Holyoke Paper Corp., New York, N. Y.
McLaurin-Jones Co., Brookfield, Mass.
Mid-States Gummed Paper Co., Chicago, Ill.
Minnesota Mining & Mfg. Co., St. Paul, Minn.—203
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Queen City Paper Co., Cincinnati, O.
Rexford Paper Co., Milwaukee, Wis.
Reyburn Mfg. Co., Philadelphia, Pa.
Schulman Co., Louis, New York, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.

GUMMED TAPE (Plain, Printed, Colored)

Atlas Label Co., Chicago, Ill.
Badger State Paper Co., Milwaukee, Wis.
Better Packages, Shelton, Conn.
Bird & Sons, E. Walpole, Mass.
Central Paper Co., Menasha, Wis.
Chicago Gummed Tape Co., Chicago, Ill.
Crowell Corp., The, Yorklyn, Del.
Datz & Co., A. S., Philadelphia, Pa.
Edgewater Paper Co., Menasha, Wis.
Ever Ready Label Corp., New York, N. Y.—Insert 188-189
Gummed Paper Products Co., Troy, O.
Gummed Tape & Devices Co., Brooklyn, N. Y.
Holyoke Paper Corp., New York, N. Y.
Hudson Bag Co., Brooklyn, N. Y.
Lambooy Label & Wrapper Co., Kalamazoo, Mich.
Matthias Paper Corp., Philadelphia, Pa.
McLaurin-Jones Co., Brookfield, Mass.
Metal Specialties Co., Chicago, Ill.
Mid-States Gummed Paper Co., Chicago, Ill.
Moore & Thompson Paper Co., Bellows Falls, Vt.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Rexford Paper Co., Milwaukee, Wis.
Schulman Co., Louis, New York, N. Y.
Standard Paper Co., Bellows Falls, Vt.
Tanglefoot Co., Grand Rapids, Mich.
Unique Printed Products Co., Terre Haute, Ind.
Union Gummed Products Co.. Brooklyn, N. Y.
Western Waxed Paper Co., North Portland, Ore.
Wortendyke Mfg. Co., Richmond, Va.

GUMMED TAPE (Transparent Cellulose)

Gummed Tape & Devices Co., Brooklyn, N. Y.
Minnesota Mining & Mfg. Co., St. Paul, Minn.—203

INK, GLASSINE, TRANSPARENT CELLULOSE

Cray-Finne Co., Inc., New York, N. Y.
General Printing Ink Corp., New York, N. Y.—Insert 194-195
Huber, Inc., J. M., New York, N. Y.
International Printing Ink Corp., New York, N. Y.
Johnson, Inc., C. Eneu, Philadelphia, Pa.
Levey Co., Inc., Frederick H., New York, N. Y.
Lewis Roberts, Inc., Newark, N. J.
Morrill Co., Geo. H., Div. of Gen. Ptg. Ink, New York, N. Y.—Insert 194-195
Sinclair & Carroll Co., Inc., New York, N. Y.
Sinclair & Valentine, New York, N. Y.
Triangle Ink & Color Co., Inc., Brooklyn, N. Y.
Ullman Co., Sigmund, New York, N. Y.—Insert 194-195

INK, LITHOGRAPHING AND PRINTING

American Ptg. Ink Co., Div. Gen. Ptg. Ink, New York, N. Y.
California Ptg. Ink Co., San Francisco, Cal.
Coffee & Co., J. E., Union City, N. J.
Cray-Finne Co., Inc., New York, N. Y.
Davids Ink Co., Thaddeus, New York, N. Y.
General Printing Ink Corp., New York, N. Y.—Insert 194-195
Huber, Inc., J. M., New York, N. Y.
International Printing Ink Corp., New York, N. Y.
Johnson, Inc., C., Eneu, Philadelphia, Pa.
Levey Co., Inc., Frederick H., New York, N. Y.
Morrill Co., Geo. H., Div. of Gen. Ptg. Ink, New York, N. Y.—Insert 194-195
Peerless Roll Leaf Co., Inc., Union City, N. J.
Sinclair & Carroll Co., Inc., New York, N. Y.
Sinclair & Valentine, New York, N. Y.
Standard Ptg. Ink Color Co., Inc., Brooklyn, N. Y.
Triangle Ink & Color Co.. Brooklyn, N. Y.
Ullman Co., Sigmund, New York, N. Y.—Insert 194-195

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For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

INK, STENCILING

Binney & Smith, New York, N. Y.
Bradley Stencil Machine Co., St. Louis, Mo.
Coffee & Co., J. E., Union City, N. J.
Diagraph Stencil Machine Corp., St. Louis, Mo.
Garvey Fountain Brush & Ink Co., St. Louis, Mo.
Marsh Stencil Machine Co., Belleville, Ill.

INK, WATER COLOR PRINTING

Cray-Finne Co., Inc., New York, N. Y.
International Printing Ink Co., New York, N. Y.
Triangle Ink & Color Co., Brooklyn, N. Y.
Ullman Co., Sigmund, New York, N. Y.—Insert 194-195

INSERTS, PACKAGE

See Lithographers

JAR COVERINGS

See Caps, Metal & Molded

JARS, CELLULOID, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Co., South Orange, N. J.—195

JARS, GLASS

See Bottles, Glass

JARS, MOLDED

See Boxes, Molded Plastics

JARS, OPAL

Brockway Machine Bottle Co., Brockway, Pa.
Carr-Lowrey Glass Co., Baltimore, Md.
Colorcraft Container Co., Cleveland, O.—154
Hazel-Atlas Glass Co., Wheeling, W. Va.
Owens-Illinois Glass Co., Toledo, O.—210-211
Ruth Glass Co., New York, N. Y.
Wheaton, T. C., Millville, N. J.
Whitall Tatum Co., New York, N. Y.

JARS (Packers' Tumblers)

Brockway Machine Bottle Co., Brockway, Pa.
Capstan Glass Co., Connellsville, Pa.
Federal Glass Co., Columbus, O.
General Glass Co., Lancaster, O.
Hazel Atlas Glass Co., Wheeling, West Va.
Owens-Illinois Glass Co., Toledo, O.—210-211

LABELS AND SEALS (Flat and Embossed)

American Label Co., The, New York, N. Y.
Arkadia Paper Products Corp., New York, N. Y.
Atlas Label Co., Chicago, Ill.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Bennington Wax Paper Co., Bennington, Vt.
Brett Litho. Co., Long Island City, N. Y.
Cameo Die Cutting & Engraving Co., New York, N. Y.—Insert 156-157
Consolidated Lithographing Corp., Brooklyn, N. Y.
Dennison Mfg. Co., Framingham, Mass.—179
Einson-Freeman Co., Inc., Long Island City, N. Y.—164-165
Ever Ready Label Corp., New York, N. Y.—Insert 188-189
Fitzhugh, Inc., Wm. W., Brooklyn, N. Y.
Forbes Litho. Mfg. Co., Boston, Mass.—Insert 196-197
Foxon Co., The, Providence, R. I.—Insert 184-185
Grand Rapids Label Co., Grand Rapids, Mich.
Green Co., Stephen, Philadelphia, Pa.
Hanograf Corp., New York, N. Y.
Holyoke Paper Corp., New York, N. Y.
Horn, John, New York, N. Y.
Howell & Co., F. M., Elmira, N. Y.
Illinois Carton & Label Co., Chicago, Ill.
Kaumagraph Co., New York, N. Y.
Kehlmann Co., L., New York, N. Y.
Kirby-Cogeshall Co., Milwaukee, Wis.
Krause, Inc., Richard M., New York, N. Y.—286
Lambooy Label & Wrapper Co., Kalamazoo, Mich.
Lord Baltimore Press, Baltimore, Md.
Manhattan Label Co., New York, N. Y.
Mason & Sons, F. E., Batavia, N. Y.
May Co., J. L., New York, N. Y.
McCandlish Litho. Corp., Philadelphia, Pa.
Michigan Litho. Co., Grand Rapids, Mich.—Insert 206-207
Milwaukee Label & Seal Co., Milwaukee, Wis.
Muirson Label & Carton Co., Brooklyn, N. Y.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
National Art Co., New York, N. Y.
Reyburn Mfg. Co., Philadelphia, Pa.
Reynolds Metals Co., Inc., New York, N. Y.—Insert 168-169
Robinson Tag & Label Co., New York, N. Y.
St. Louis Sticker Co., St. Louis, Mo.
Schmitt & Co., Inc., Geo., Brooklyn, N. Y.
Shuman Co., Frank G., Chicago, Ill.
Stanley Mfg. Co., The, Dayton, O.—259
Strobridge Litho. Co., Cincinnati, O.
Tablet & Ticket Co., The, Chicago, Ill.
Unique Printed Products Co. Inc., Terre Haute, Ind.
United States Printing & Litho. Corp., Cincinnati, O.
Waldorf Paper Products Co., St. Paul, Minn.
Weil Sons Litho. Co., David, Brooklyn, N. Y.
Western Label Co., Los Angeles, Cal.
Wheeler-Van Label Co., Grand Rapids, Mich.
Whitney Tag Co., Inc., New York, N. Y.
Wood, Nathan & Virkus Co., New York, N. Y.—Insert 276-277
Wynekoop Co., Walker, Chicago, Ill.—283

LABELS, MAILING AND SHIPPING

Atlas Label Co., Chicago, Ill.
Bartlett Label Co., Kalamazoo, Mich.
Cameo Die Cutting & Engraving Co., New York, N. Y.—Insert 156-157
Dennison Mfg. Co., Framingham, Mass.—179
Ever Ready Label Corp., New York, N. Y.—Insert 188-189
Fenton Label Co., Philadelphia, Pa.
Gamse & Bros., Inc., H., Baltimore, Md.
Greene Co., Stephen, Philadelphia, Pa.
Horn, John, New York, N. Y.
Howell & Co., F. M., Elmira, N. Y.
International Tag Co., Chicago, Ill.
Kalamazoo Label Co., Kalamazoo, Mich.
Lambooy Label & Wrapper Co., Kalamazoo, Mich.
May Co., The, J. L., New York, N. Y.
Milwaukee Label & Seal Co., Milwaukee, Wis.
Pictorial Paper Package Corp., Aurora, Ill.
Rexford Paper Co., Milwaukee, Wis.
Reyburn Mfg. Co., Philadelphia, Pa.
St. Louis Sticker Co., St. Louis, Mo.
Salisbury Mfg. Co., Providence, R. I.
Shuman Co., Frank G., The, Chicago, Ill.
Smelzer & Co., Quentin R., Williamsville, N. Y.
Tablet & Ticket Co., The, Chicago, Ill.
Unique Printed Products Co., Inc., Terre Haute, Ind.
Wadill Printing & Litho. Co., Danville, Va.
Wheeler-Van Label Co., Grand Rapids, Mich.

LABELS, METAL

Apollo Metal Works, La Salle, Ill.—127—(Metal For)
Arkadia Paper Products Corp., New York, N. Y.
Attleboro Printing & Embossing Co., Attleboro, Mass.
Cameo Die Cutting & Engraving Co., New York, N. Y.—Insert 156-157
Dennison Mfg. Co., Framingham, Mass.—179
Foxon Co., The, Providence, R. I.—Insert 184-185
Greene Co., Stephen, Philadelphia, Pa.
Krause, Inc., Richard M., New York, N. Y.—286
Lambooy Label & Wrapping Co., Kalamazoo, Mich.
Mason & Sons, F. E., Batavia, N. Y.
Reyburn Mfg. Co., Philadelphia, Pa.
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Shuman Co., Frank G., Chicago, Ill.
Stanley Mfg. Co., Dayton, O.—259
Tablet & Ticket Co., The, Chicago, Ill.

LACE PAPER

American Lace Paper Co., Milwaukee, Wis.
Marathon Paper Mills Co., Rothschild, Wis.
Milwaukee Lace Paper Co., Milwaukee, Wis.
Sayford Co., Inc., Frank M., Brooklyn, N. Y.
U. S. Lace Paper Works, Brooklyn, N. Y.

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LAMINATING, CUSTOM

Dobeckmun Co., The, Cleveland, O.—181
Frank Associates, Inc., New York, N. Y.
Ralston & Co., W., Inc., Niagara Falls, N. Y.

LEATHER (Imitation)

Carpenter & Co., Inc., L. E., Newark, N. J.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Dupont Fabrikoid Co.. Newburg, N. Y.
Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Holliston Mills, Inc., The, Norwood, Mass.
Keratol Co., The, Newark, N. J.
Peerless Roll Leaf Co., Inc., Union City, N. J.
Permatex Fabric Co., The, Jewett City, Conn.
Premoid Co., Springfield, Mass.
Standard Textile Products Co.. New York, N. Y.
Textileather Corp., Toledo, O.—262
Whiting Co., Inc., C. R., Hackensack, N. J.
Zapon Co., Stamford, Conn.

LINERS (Box, Barrel and Bag)

Angier Corp., Framingham, Mass.
Arkell Safety Bag Co., New York, N. Y.
Bemis Bros. Bag Co., St. Louis, Mo.
Container Corp. of America, Chicago, Ill.—140
Edgewater Paper Co., Menasha, Wis.
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Gair Co., Robert, New York, N. Y.
Hamersley Mfg. Co., Garfield, N. J.
International Paper Co., New York, N. Y.
Kimberly-Clark Corp., Chicago, Ill.—190-191
Paper Service Co., The. Lockland, O.
Paterson Parchment Paper Co., Passaic, N. J.—202
Rexford Paper Co., Milwaukee, Wis.
Reynolds Metals Co., Inc., New York, N. Y.—Insert 168-169
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Safepack Mills, Millis, Mass.
Traver Paper & Mfg. Co., Chicago, Ill.
Union Bag & Paper Co., New York, N. Y.—264

LINERS, CAP

Anchor Cap & Closure Co., Long Island City, N. Y.
Armstrong Cork Co., Lancaster, Pa.—133
Bond Mfg. Corp., Wilmington, Del.—138
General Felt Products, Inc., Brooklyn, N. Y.
Irvington Varnish & Insulator Co., Irvington, N. J.
Phoenix Metal Cap Co., Chicago, Ill.
Standards Insulation Co., East Rutherford, N. J.

LINERS, WAXED

See Waxed Paper

LITHOGRAPHERS

Anchor Cap & Closure Corp.. Long Island City, N. Y.
American Colortype Co., New York, N. Y.
Art Gravure Corp., New York, N. Y.
Atlantic Litho. & Ptg. Co., New York, N. Y.
Brett Litho. Co., Long Island City, N. Y.
Brooks Bank Note Co., Springfield, Mass.
Brooks and Porter, Inc., New York, N. Y.—276
Brown & Bigelow, Inc., St. Paul, Minn.
Calvert Litho. Co., Detroit, Mich.
Central Lithograph Co., The, Cleveland. O.
Consolidated Lithographing Corp., Brooklyn, **N. Y.**
Donaldson Litho. Co., Newport, Ky.
Edwards & Deutsch Litho. Co., Chicago, Ill.
Einson-Freeman Co., Inc., Long Island City, N. Y.—164-165
Erie Litho. & Ptg. Co., Erie, Pa.
Fairchild Corp., E. E., Rochester, N. Y.
Federal Litho. Co., Detroit, Mich.
Forbes Litho. Mfg. Co., Boston, Mass.—Insert 196-197
Genesee Valley Litho. Co., Rochester, N. Y
Gerlach-Barklow Co., Joliet, Ill.
Goes Litho. Co., Chicago, Ill.
Greene Co.. Stephen, Philadelphia, Pa.
Gugler Litho. Co., Milwaukee, Wis.
Haass Litho. Co., Inc., New York, N. Y.
Henderson Litho. Co., Cincinnati, O.
Heywood Co., Inc., R. R., New York, N. Y.
Kaumagraph Co., New York, N. Y.
Lord Baltimore Press, Baltimore, Md.
Magill-Weinsheimer Co., Chicago, Ill.
McCandlish Litho. Corp., Philadelphia, Pa.
Meyercord Co., Chicago, Ill.
Michigan Litho. Co., Grand Rapids, Mich.—Insert 206-207
Milprint Products Corp., Milwaukee, Wis., & Philadelphia, Pa.
National Art Co., New York, N. Y.
National Folding Box Co., New Haven, Conn.
National Printing & Engr. Co., Chicago, Ill.
Northwestern Litho. Co., Milwaukee, Wis.
Oberly & Newell, New York, N. Y.
Pictorial Paper Package Corp., Aurora, Ill.
Powers Co., W. F., New York, N. Y.
Regensteiner Corp., Chicago, Ill.
Rochester Folding Box Co., Rochester, N. Y.
Rode & Brand, Inc., New York, N. Y.
Sale Litho. Co., Buffalo, N. Y.
Schmidt Litho. Co., Theo. A.. Chicago, Ill.
Schmidt Litho. Co., San Francisco, Cal.
Schmitt & Co., Inc., Geo., Brooklyn, N. Y.
Schultz Litho. Co., A. C., Milwaukee, Wis.
Snyder & Black, Inc., New York, N. Y.
Standard Ptg. Co., Louisville, Ky.
Stecher Litho. Co., Rochester, N. Y.
Strobridge Litho. Co., Cincinnati, O.
Stubbs Co., The, Detroit, Mich.
Traung Label & Litho. Co., San Francisco, Cal.
Trautmann, Bailey & Blampey, New York. N. Y.
U. S. Ptg. & Litho. Co., Cincinnati, O.
Waddill Printing & Litho. Co., Danville, Va.
Walker Litho. & Pub. Co., Boston, Mass.
Weil Sons Litho. Co., David, Brooklyn, N. Y.
Wilmanns Bros. Co., Milwaukee, Wis.

LITHOGRAPHERS, METAL

Acme Metal Decorating Co., Brooklyn, N. Y.
American Can Co., New York, N. Y.
Burdick & Son, Inc., Albany, N. Y.—178
Clark Mfg. Co., J. L., Rockford, Ill.
Continental Can Co., New York, N. Y.—Insert 140-141
Heekin Can Co., Cincinnati, O.
Metal Package Corp., New York, N. Y.—172
Phoenix Metal Cap Co., Chicago, Ill.
Robertson Steel & Iron Co., W. F., Springfield, O.
Tin Decorating Co. of Baltimore, The, Baltimore. Md.—263

MACHINES, AUTOMATIC WEIGHING, DRY FILLING

American Machine & Foundry Co., Brooklyn, N. Y.
Arenco Machine Co., New York, N. Y.—131
Automat Molding & Folding Co., The, Toledo, O.
Automatic Packaging Corp., Devon, Pa.
Brown Bag Filling Machine Co., Fitchburg, Mass.
Cartoning Machinery Corp., Newport, R. I.
Consolidated Packaging Machinery Co., Buffalo, N. Y.—175
Ferguson Co., J. L., Joliet, Ill.—182
Goat Co., Inc., The Fred, Brooklyn, N. Y.—280
Gump Co., B. F., Chicago, Ill.
Johnson Automatic Sealer Co., Ltd.. Battle Creek, Mich.
Lehmann Co., Inc., J. M., New York, N. Y.
Package Machinery Co., Springfield, Mass.—214-215
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Redington Co., F. B., Chicago, Ill.
Scale & Machinery, Inc., New York, N. Y.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
Stokes & Smith Co., Philadelphia, Pa.—169-171
Triangle Package Machinery Co., Chicago, Ill.

MACHINES, BAG FILLING AND SEALING

Acme Staple Co., Camden, N. J.—128
Automat Molding & Folding Co., The, Toledo, O.
Automatic Packaging Corp., Devon, Pa.
Bemis Bro. Bag Co., Minneapolis, Minn.
Bostitch Sales Co., East Greenwich, R. I.—158-159
Brown Bag Filling Machine Co., Fitchburg. Mass.
Cartoning Machinery Corp., Newport, R. I.
Consolidated Packaging Machinery Corp., Buffalo, N. Y.—175
Ferguson Co., J. L., Joliet, Ill.—182
Goat Machine Co., Inc., The Fred, Brooklyn, N. Y.—280

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Gump Co., B. F., Chicago, Ill.
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Lehmann Co., Inc., J. M., New York, N. Y.
Package Machinery Co., Springfield, Mass.—214-215
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Redington Co., F. B., Chicago, Ill.
Rose Bros. (Gainsborough) Ltd., Gainsborough, England—257
Saranac Bag Sealers, Inc., Benton Harbor, Mich.
Scale & Machinery, Inc., New York, N. Y.
Stokes & Smith Co., Philadelphia, Pa.—169-171
Triangle Package Machinery Co., Chicago, Ill.
Valdor Sales, Inc., Caldwell, N. J.

MACHINES, BANDING (Cigar)

Colton Co., Arthur, Detroit, Mich.

MACHINES, BASKET MAKING

Saranac Machine Co., Benton Harbor, Mich.

MACHINES, BOTTLE CAPPING AND SEALING

Aluminum Co. of America, Pittsburgh, Pa.
Anchor Cap & Closure Corp., Long Island City, N. Y.
Consolidated Packaging Machinery Co., Buffalo, N. Y.—175
Crown Cork & Seal Co., Baltimore, Md.—162-163
Elgin Mfg. Co., Elgin, Ill.
Horix Manufacturing Corp., Pittsburgh, Pa.
Kiefer Machine Co., The, Karl, Cincinnati, O.
Liquid Carbonic Corp., The, Chicago, Ill.—192
Owens-Illinois Glass Co., Toledo, O.—210-211
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Stokes & Smith Co., Philadelphia, Pa.—169-171
U. S. Bottlers Machinery Corp., Chicago, Ill.—265
Williams Sealing Corp., Decatur, Ill.

MACHINES, BOTTLE CORKING

Ermold Co., Edward, New York, N. Y.
Kiefer Machine Co., The Karl, Cincinnati, O.
McDonald Engineering Corp., Brooklyn, N. Y.—200-201
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
U. S. Bottlers Machinery Co., Chicago, Ill.—265

MACHINES, BOTTLE FILLING

Colton Co., Arthur, Detroit, Mich.
Crown Cork & Seal Co., Baltimore, Md.—162-163
Elgin Mfg. Co., Elgin, Ill.
Filler Machine Co., Inc., Philadelphia, Pa.
Horix Mfg. Corp., Pittsburgh, Pa.
Ivers-Lee Co., Newark, N. J.—186-187
Kiefer Machine Co., The Karl, Cincinnati, O.
Liquid Carbonic Corp., The, Chicago, Ill.—192
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Scale & Machinery, Inc., New York, N. Y.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
Stokes & Smith Co., Philadelphia, Pa.—169-171
U. S. Bottlers Machinery Co., Chicago, Ill.—265

MACHINES, BOTTLE WASHING

Crown Cork & Seal Co., Baltimore, Md.—162-163
Elgin Mfg. Co., Elgin, Ill.
Kiefer Machine Co., The Karl, Cincinnati, O.
Liquid Carbonic Corp., The, Chicago, Ill.—192
Owens-Illinois Glass Co., Toledo, O.—210-211
Stokes Machine Co., F. J., Philadelphia, Pa.—261
U. S. Bottlers Machinery Co., Chicago, Ill.—265

MACHINES, BOX PACKING

Burt Machine Co., Baltimore, Md.—135
Ferguson Co., J. L., Joliet, Ill.—182
New Way Canning Machine Co., Hanover, Pa.
Standard-Knapp Corp., Long Island City, N. Y.

MACHINES, BOX PRINTING

Beck Machine Co., Charles, Philadelphia, Pa.
Chambon Corp., Union City, N. J.—174
Hooper Co., F. X., Glenarm, Md.
Knowlton Co., M. D., Rochester, N. Y.
Langston Co., Samuel M., Camden, N. J.
Morgan Machine Co., Inc., Rochester, N. Y.
New Jersey Machine Corp., Hoboken, N. J.
Specialty Automatic Machine Co., Medford, Mass.
Staude Mfg. Co., E. G., St. Paul, Minn.—260
Thomson National Press Co., Franklin, Mass.

MACHINES, BOX STRAPPING

Acme Steel Co., Chicago, Ill.—125
Gerrard Co., Inc., The, Chicago, Ill.
Signode Steel Strapping Co., Chicago, Ill.
Stanley Works, New Britain, Conn.
Tennant & Sons, C., New York, N. Y.

MACHINES, BOX WINDOW MAKING

International Paper Box Machine Co., Nashua, N. H.
Specialty Automatic Machine Co., Medford, Mass.
Staude Manufacturing Co., E. G., St. Paul, Minn.—260

MACHINES, BUNDLE TYING (Wire)

Acme Steel Co., Chicago, Ill.—125
Gerrard Co., Inc., Chicago, Ill.
Signode Steel Strapping Co., Chicago, Ill.
Stanley Works, New Britain, Conn.
Tennant & Sons, C., New York, N. Y.

MACHINES, BUTTER, PRINT

Automat Molding & Folding Co., The Toledo, O.
Morris Packaging Equipment Co., Toledo, O.—212
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Redington Co., F. B., Chicago, Ill.

MACHINES, CAN CAPPING

Aluminum Co. of America, Pittsburgh, Pa.
American Can Co., New York, N. Y.
Anchor Cap & Closure Corp., Long Island City, N. Y.
Consolidated Packaging Machinery Corp., Buffalo, N. Y.—175
Continental Can Co., New York, N. Y.—Insert 140-141
Crown Cork & Seal Co., Inc., Baltimore, Md.—162-163
Elgin Mfg. Co., Elgin, Ill.
Ferguson Co., J. L., Joliet, Ill.—182
Kiefer Machine Co., The Karl, Cincinnati, O.
Metal Package Corp., New York, N. Y.—172
Phoenix Metal Cap Co., Chicago, Ill.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
U. S. Bottlers Machinery Co., Chicago, Ill.—265
Williams Sealing Corp., Decatur, Ill.

MACHINES, CAN CASING

Burt Machine Co., Baltimore, Md.—135
Ferguson Co., J. L., Joliet, Ill.—182
New Way Canning Machine Co., Hanover, Pa.
Standard-Knapp Corp., Long Island City, N. Y.

MACHINES, CAN CLOSING AND SEALING

American Can Co., New York, N. Y.
Consolidated Packaging Machinery Corp., Buffalo, N. Y.—175
Continental Can Co., New York, N. Y.—Insert 140-141
Elgin Mfg. Co., Elgin, Ill.
Ferguson Co., J. L., Joliet, Ill.—182
Kiefer Machine Co., The Karl, Cincinnati, O.
Metal Package Corp., New York, N. Y.—172

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R. C. Can Co., St. Louis, Mo.—253
U. S. Bottlers Machinery Co., Chicago, Ill. —265
Williams Sealing Corp., Decatur, Ill.

MACHINES, CAN FILLING

Brown Bag Filling Machine Co., Fitchburg, Mass.
Colton Co., Arthur, Detroit, Mich.
Elgin Mfg. Co., Elgin, Ill.
Ferguson Co., J. L., Joliet, Ill.—182
Filler Machine Co., Inc., Philadelphia, Pa.
Horix Manufacturing Corp., Pittsburgh, Pa.
Kiefer Machine Co., The Karl, Cincinnati, O.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Scale & Machinery, New York, N. Y.
Stokes Machine Co., F. J., Philadlephia, Pa.—261
Stokes & Smith Co., Philadelphia, Pa.—169-171
Triangle Packaging Machinery Co., Chicago, Ill
U. S. Bottlers Machinery Co., Chicago, Ill. —265

MACHINES, CARDING AND DISPLAY

Acme Staple Co., Camden, N. J.—128
Bates Mfg. Co., Orange, N. J.
Bostitch Sales Co., E. Greenwich, R. I.—158-159
Parrot Speed Fastener Co., New York, N. Y.—213

MACHINES, CARTON LOADING

Automat Molding & Folding Co., The, Toledo, O.
Boettcher, Inc., Orange, N. J.
Cartoning Machinery Corp., Newport, R. I.
Ferguson Co., J. L., Joliet, Ill.—182
Goat Machine Co., Inc., The Fred, Brooklyn, N. Y.—280
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Jones & Co., Inc., R. A., Cincinnati, O.
Morris Packaging Equipment Co., Toledo, O.—212
Peters Machinery Co., Chicago, Ill.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass—216-217, 221-252
Redington Co., F. B., Chicago, Ill.
Rose Bros. (Gainsborough) Ltd., Gainsborough, England—257
Scale and Machinery, Inc., New York, N. Y.
Stokes & Smith Co., Philadelphia, Pa.—169-171

MACHINES, CARTON AND PAPER BOX MAKING

Acme Staple Co., Camden, N. J.—128
Bostitch Sales Co., E. Greenwich, R. I.—158-159
Dexter Folder Co., New York, N. Y.—141-152
Ferguson Co., J. L., Joliet, Ill.—182
General Food Package Equipment Co., Benton Harbor, Mich.
Goat Machine Co., Inc., The Fred, Brooklyn, N. Y.—280
Inman Manufacturing Co., Amsterdam, N. Y.
International Paper Box Machine Co., Nashua, N. H.
Knowlton Co., M. D., Rochester, N. Y.
National Metal Edge Box Co., Philadelphia, Pa.—204
New Jersey Machine Co., Hoboken, N. J.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Rose Bros. (Gainsborough), Ltd., Gainsborough, England—257
Saranac Machine Co., Benton Harbor, Mich.
Self-Locking Machinery Co., Chicago, Ill.
Specialty Automatic Machine Co., Medford, Mass.
Stande Manufacturing Co., E. G., St. Paul, Minn.—260
Stokes & Smith Co., Philadelphia, Pa.—169-171
U. S. Automatic Box Machinery Co., Boston, Mass.

MACHINES, CARTON FORMING, LINING, FOLDING, CLOSING

Automat Molding & Folding Co., Toledo, O.
Boettcher, Inc., Orange, N. J.
Cartoning Machinery Corp., Newport, R. I.
Consolidated Packaging Machinery Corp., Buffalo, N. Y.—175
Ferguson Co., J. L., Joliet. Ill.—182
Goat Machine Co., Inc., The Fred, Brooklyn, N. Y.—280
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Morris Packaging Equipment Co., Toledo, O.—212
Package Machinery Co., Springfield, Mass. —214-215
Peters Machinery Co., Chicago, Ill.
Pneumatic Scale Corp., Norfolk Downs, Mass.—216-217, 221-252
Redington Co., F. B., Chicago, Ill.
Rose Bros. (Gainsborough), Ltd., Gainsborough, England—257
Specialty Automatic Machine Co., Medford, Mass.
Stokes & Smith Co., Philadelphia, Pa.—169-171
Triangle Package Machinery Co., Chicago, Ill.

MACHINES, COLLAPSIBLE TUBE FILLING

Colton Co., Arthur, Detroit, Mich.
Kiefer Machine Co., The Karl, Cincinnati, O.
New England Collapsible Tube Co., New London, Conn.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
Wirz, Inc., A. H., Chester, Pa.—274-275

MACHINES, CONTAINER SEALING (Adhesive)

Burt Machine Co., Baltimore, Md.—135
Dexter Folder Co., New York, N. Y.—141-152
Ferguson Co., J. L., Joliet, Ill.—182
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Standard-Knapp Corp., Long Island City, N. Y.
Valdor Sales, Inc., Caldwell, N. J.

MACHINES, CONTAINER SEALING (Gummed Tape)

Better Packages Inc., Shelton, Conn.
Gummed Tape & Devices Co., Brooklyn, N. Y.
Holyoke Paper Corp., New York, N. Y.
Link Co., L., New York, N. Y.
Metal Specialties Co., Chicago, Ill.
Nashua Package Sealing Co., Nashua, N. H.
Peters Machinery Co., Chicago, Ill.
Potdevin Machine Co., Brooklyn, N. Y.
Valdor Sales, Inc., Caldwell, N. J.

MACHINES, CONTAINER SEALING (Wire)

Acme Staple Co., Camden, N. J.—128
Bostitch Sales Co., E. Greenwich, R. I.—158-159
Dexter Folder Co., New York, N. Y.—141-152
Ideal Stitcher & Mfg. Co., Racine, Wis.
Morrison Co., J. L., Niagara Falls, N. Y.
New Jersey Wire Stitching Co., The, Camden, N. J.
Saranac Machine Co., Benton Harbor, Mich.

MACHINES, COUNTING

Durant Mfg. Co., Milwaukee, Wis.
Redington Co., F. B., Chicago, Ill.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
Veeder-Root Co., Hartford, Conn.

MACHINES, EMBOSSING

Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
Peerless Roll Leaf Co., Union City. N. J.
Perkins Co., B. F., Holyoke, Mass.
Thomson National Press Co., Franklin, Mass.
Waldron Corp., John, New Brunswick, N. J.

MACHINES, GLUING (Labels, etc.)

Burt Machine Co., Baltimore, Md.—135
Cartoning Machinery Corp., Newport, R. I.
Economic Machinery Co., Worcester, Mass.—180
Ferguson Co., J. L., Joliet, Ill.—182
Grammes & Son, Inc., L. F., Allentown, Pa.
Knowlton Co., N. D., Rochester, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.—192

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McDonald Engineering Corp., Brooklyn, N. Y.—200-201
New Jersey Machine Corp., Hoboken, N. J.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Potdevin Machinery Co., Brooklyn, N. Y.
Specialty Automatic Machine Co., Medford, Mass.
Staude Mfg. Co., E. G., St. Paul, Minn.—260
Stokes & Smith Co., Philadelphia, Pa.—169-171

MACHINES, HEAT SEALING (Transparent Cellulose)

Sylvania Industrial Corp., New York, N Y.—269-272

MACHINES, LABELING

Arenco Machine Co., Inc., New York, N. Y.—131
Burt Machine Co., Baltimore, Md.—135
Economic Machinery Co., Worcester, Mass.—180
Ermold Co., Edward, New York, N. Y.
Ferguson Co., J. L., Joliet, Ill.—182
Liquid Carbonic Corp., O. & J., Label Div., Chicago, Ill.—192
McDonald Engineering Corp., Brooklyn, N. Y.—200-201
New Jersey Machine Co., Hoboken, N. J.
New Way Canning Machine Co., Hanover, Pa.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Potdevin Machine Co., Brooklyn, N. Y.
Redington Co., F. B., Chicago, Ill.
Rose Bros. (Gainsborough), Ltd., Gainsborough, England—257
Standard-Knapp Corp, Long Island City, N. Y.
Staude Mfg. Co., E. G., St. Paul, Minn.—260
Stokes & Smith Co., Philadelphia, Pa.—169-171

MACHINES, LAMINATING (Cellulose)

Chambon Corp., Union City, N. J.—174
Waldron Corp., John, New Brunswick, N. J.

MACHINES, LIQUID FILLING

Colton Co., Arthur, Detroit, Mich.
Crown Cork & Seal Co., Baltimore, Md.—162-163
Elgin Mfg. Co., Elgin, Ill.
Ferguson Co., J. L., Joliet, Ill.—182
Horix Mfg. Corp., Pittsburgh, Pa.
Kiefer Machine Co., The Karl, Cincinnati, O.
Liquid Carbonic Corp., The, Chicago, Ill.—192
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Stokes Machine Co., F. J., Philadelphia, Pa.—261
U. S. Bottlers Machinery Co., Chicago, Ill.—265

MACHINES, PACKET FILLING

Arenco Machine Co., Inc., New York, N. Y.—131
Automatic Packaging Corp., Devon, Pa.
Brown Bag Filling Machine Co., The, Fitchburg, Mass.
Cartoning Machinery Corp., Newport, R. I.
Consolidated Packaging Machinery Corp., Buffalo, N. Y.—175
Ferguson Co., J. L., Joliet, Ill.—182
Gump Co., B. F., Chicago, Ill.
Ivers-Lee Co., Newark, N. J.—186-187
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Redington Co., F. B., Chicago, Ill.
Rose Bros. (Gainsborough), Ltd., Gainsborough, England—257
Scale & Machinery, Inc., New York, N. Y.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
Stokes & Smith Co., Philadelphia, Pa.—169-171
Triangle Packaging Machinery Co., Chicago, Ill.

MACHINES, PAPER BAG MAKING

Goat Machine Co., Inc., The Fred, Brooklyn, N. Y.—280
Heinrich, Inc., H. H., New York, N. Y.
Package Machinery Co., Springfield, Mass.—214-215
Potdevin Machine Co., Brooklyn, N. Y.
Smith & Winchester Mfg. Co., South Windham, Conn.
Specialty Automatic Machine Co., Medford, Mass.
Staude Mfg. Co., E. G., St. Paul, Minn.—260

MACHINES, PAPER CAN FILLING, SEALING AND CLOSING

Lily Tulip Cup Corp., New York, N. Y.
Specialty Automatic Machine Co., Medford, Mass.
Stokes & Smith Co., Philadelphia, Pa.—169-171

MACHINES, PAPER CAN MAKING

Ferguson Co., J. L., Joliet, Ill.—182
International Paper Box Machinery Co., Nashua, N. H.
Knowlton Co., M. D., Rochester, N. Y.
Langston Co, Samuel M., Camden, N. J.
Specialty Automatic Machine Co., Medford, Mass.
Staude Manufacturing Co., E. G., St. Paul, Minn.—260

MACHINES, ROLL SLITTERS AND REWINDERS

Beloit Iron Works, Beloit, Wis.
Cameron Machine Works, Brooklyn, N Y.
Inman Mfg. Co., Amsterdam, N. Y.
Langston Co., Samuel M., Camden, N. J.
Specialty Automatic Machine Co., Medford, Mass.
Staude Manufacturing Co., E. G., St. Paul, Minn.—260
Waldron Corp., John, New Brunswick, N. J.

MACHNES, ROLL WRAPPING

Automat Molding & Folding Co., Toledo, O.
Cartoning Machinery Corp., Newport, R. I.
Package Machinery Corp., Springfield, Mass.—214-215
Peters Machinery Co., Chicago, Ill.
Redington Co., F. B., Chicago, Ill.
Valdor Sales, Inc., Caldwell, N. J.

MACHINES, SEMI-LIQUID FILLING

American Machine & Foundry Co., Brooklyn, N. Y.
Colton Company, Arthur, Detroit, Mich
Elgin Manufacturing Co., Elgin, Ill.
Filler Machine Co., Inc., Philadelphia, Pa.
Horix Mfg. Corp., Pittsburgh, Pa.
Kiefer Machine Co., The Karl, Cincinnati, O.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
U. S. Bottlers Machinery Co., Chicago, Ill.—265

MACHINES, SPECIAL PRODUCTION

Arenco Machine Co., Inc., New York, N. Y.—131
Cartoning Machinery Corp. Newport, R. I.
Colton Co., Arthur, Detroit, Mich.
Dexter Folder Co., New York, N. Y.—141-152
Ferguson Co., J. L., Joliet, Ill.—182
General Food Package Equipment Corp., Benton Harbor, Mich.
Package Machinery Co., Springfield, Mass.—214-215
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Redington Co., F. B., Chicago, Ill.
Saranac Automatic Machine Corp., Benton Harbor, Mich.
Special Production Machines, Inc. (Div. Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Stokes Machine Co., F. J., Philadelphia, Pa.—261
U. S. Bottlers Machinery Co., Chicago, Ill.—265
Waldron Corp., John, New Brunswick, N. J.

MACHINES, TABLET, COUNTING, FILLING PACKAGING

Cartoning Machinery Corp., Newport, R. I.
Colton Co., Arthur, Detroit, Mich.
Ivers-Lee Co., Newark, N. J.—186-187
Redington Co., F. B., Chicago, Ill.
Stokes Machine Co., F. J., Philadelphia, Pa.—261

MACHINES, TABLET WRAPPING

Ivers-Lee Co., Newark, N. J.—186-187
Package Machinery Co., Springfield, Mass.—214-215
Redington Co., F. B., Chicago, Ill.

MACHINES, TACKING

Acme Staple Co., Camden, N. J.—128
Bostitch Sales Co., E. Greenwich, R. I.—158-159
Hotchkiss Sales Co., Norwalk, Conn.
Parrot Speed Fastener, New York, N. Y.—213

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MACHINES, TAPE MOISTENING

Better Packages, Inc., Shelton, Conn.
Edgewater Paper Co., Menasha, Wis.
Ever Ready Label Corp., New York, N. Y. —Insert 188-189
Gummed Tape & Devices Co., Brooklyn, N. Y.
Holyoke Paper Corp., New York, N. Y.
Hummel Co., A. C., Cincinnati, O.
Link & Company, Inc., L., New York, N. Y.
McLaurin-Jones Co., Brookfield, Mass.
Metal Specialties Co., Chicago, Ill.
Mid-States Gummed Paper Co., Chicago, Ill.
Nashua Package Sealing Co., Inc., Nashua, N. H.
Rexford Paper Co., Milwaukee, Wis.

MACHINES, TEA BALL, AUTOMATIC

Pneumatic Scale Corp., Norfolk Downs, Mass.—216-217, 221-252

MACHINES, TIGHT WRAPPING

Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Rose Bros. (Gainsborough), Ltd., Gainsborough, England—257
Stokes & Smith Co., Philadelphia, Pa.—169-171

MACHINES, TRANSPARENT CELLULOSE WRAPPING

American Machine & Foundry Co., Brooklyn, N. Y.
Arenco Machine Co., New York, N. Y.—131
Automat Molding & Folding Co., The, Toledo, O.
Battle Creek Wrapping Machine Co., Battle Creek, Mich.
Boettcher, Inc., Orange, N. J.
Cartoning Machinery Corp., Newport, R. I.
Ferguson Co., J. L., Joliet, Ill.—182
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Package Machinery Co., Springfield, Mass. —214-215
Peters Machinery Co., Chicago, Ill.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Redington Co., F. B., Chicago, Ill.
Rose Bros. (Gainsborough), Ltd., Gainsborough, England—257

MACHINES, TYING (Package)

Bunn Co., B. H., Chicago, Ill.—136
International Paper Box Machine Co., Nashua, N. H.
National Bundle Tyer Co., Blissfield, Mich.
Valdor Sales, Inc., Caldwell, N. J.

MACHINES, VACUUM BOTTLE FILLING

Crown Cork & Seal Co., Baltimore, Md.—162-163
Elgin Manufacturing Co., Elgin, Ill.
Horix Mfg. Co., Pittsburgh, Pa.
Kiefer Machine Co., The Karl, Cincinnati, O.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
U. S. Bottlers Machinery Co., Chicago, Ill. —265

MACHINES, VENDING

Doehler Die Casting Co., New York, N. Y.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Quincy, Mass.—216-217, 221-252

MACHINES, WIRE STAPLING

Acme Staple Co., Camden, N. J.—128
Bates Mfg. Co., Orange, N. J.
Bostitch Sales Co., East Greenwich, R. I.—158-159
Dexter Folder Co., New York, N. Y.—141-152
Hotchkiss Sales Co., Norwalk, Conn.
Saranac Machine Co., Benton Harbor, Mich.

MACHINES, WIRE STITCHING

Bostitch Sales Co., East Greenwich, R. I.—158-159
Dexter Folder Co., New York, N. Y.—141-152
Ideal Stitcher & Mfg. Co., Racine, Wis.
Morrison Co., J. L., Niagara Falls, N. Y.
New Jersey Wire Stitching Machine Co., Camden, N. J.
Saranac Machine Co., Benton Harbor, Mich.

MACHINES, WOOD BOX MAKING

Doig, Inc., Wm. S., Brooklyn, N. Y.
Grammes & Sons, Inc., L. F., Allentown, Pa.
Morgan Machine Co., Inc., Rochester, N. Y.
Saranac Machine Co., Benton Harbor, Mich.

MACHINES, WRAPPING (Bread and Cake)

American Machine & Foundry Co., Brooklyn, N. Y.
Arenco Machine Co., Inc., New York, N. Y.—131
Baker-Perkins Co., Saginaw, Mich.
Battle Creek Wrapping Machine Co., Battle Creek, Mich.
Boettcher, Inc., Orange, N. J.
Hanover Machine Corp., Hanover, Pa.
Package Machinery Co., Springfield, Mass. 214-215
Valdor Sales, Inc., Caldwell, N. J.

MACHINES, WRAPPING (Butter)

Automat Molding & Folding Co., The, Toledo, O.
Battle Creek Wrapping Machine Co., Battle Creek, Mich.
Morris Packaging Equipment Co., Toledo, O.—212
Package Machinery Co., Springfield, Mass. —214-215
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass—216-217, 221-252
Redington Co., F. B., Chicago, Ill.

MACHINES, WRAPPING (Bottle, Jar, Can)

Burt Machine Co., Baltimore, Md.—135
Redington Co., F. B., Chicago, Ill.

MACHINES, WRAPPING (Cigar)

American Machine & Foundry Co., Brooklyn, N. Y.
Arenco Machine Co., New York, N. Y.—131
Colton Co., Arthur, Detroit, Mich.
Package Machinery Co., Springfield, Mass. —214-215

MEDICINE DISPENSERS

Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.—176
Kimble Glass Co., Vineland, N. J.—189
Owens-Illinois Glass Co., Toledo, O.—210-211
Pennsylvania Glass Products Co., Pittsburgh, Pa.

MEDICINAL DROPPERS, UNBREAKABLE, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195

METAL DISPLAYS (Decorated)

American Can Co., New York, N. Y.
Consolidated Safety Pin Co., Inc., Bloomfield, N. J.—156
Continental Can Co., New York, N. Y.—Insert 140-141
Heekin Can Co., Cincinnati, O.
Metal Package Corp., New York, N. Y.—172
Robertson Steel & Iron Co., W. F., Springfield, O.
Shank Sign Co., E. A., New York, N. Y.
Sommers Bros. Appliance Co., Saginaw, Mich.
Tin Decorating Co. of Baltimore, The, Baltimore, Md.—263
Union Steel Products Co., Albion, Mich.

MOLDERS, CUSTOM (All Types of Resins)

Allen & Hills, Inc., Auburn, N. Y.—130
American Insulator Co., New Freedom, Pa.
American Record Corp., Scranton, Pa.—160
Auburn Button Works, Inc., Auburn, N. Y.
Bakelite Corp., New York, N. Y.—157
Boonton Molding Co., Boonton, N. J.
Celluloid Corp., New York, N. Y.
Chicago Molded Products Corp., Chicago, Ill.—153
Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.—176
Columbia Phonograph Co., Bridgeport, Conn.—278-279
Diemolding Corp., Canastota, N. Y.
General Electric Co., Plastics Dept., Meriden, Conn., Textolite, Cetec, Fabroil
General Plastics, Inc., North Tonowanda, N. Y.—166-167
Kurz-Kasch Co., Dayton, Ohio.
Mack Molding Co., Wayne, N. J.
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Northern Industrial Chemical Co., Boston, Mass.
Norton Laboratories, Inc., Lockport, N. Y.

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Resinox Corp., New York, N. Y.—254
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Synthetic Plastics Co., Inc., New York, N. Y.
Toledo Synthetic Products, Inc., Toledo, O.
Waterbury Button Co., The, Waterbury, Conn.—268

MOLDING POWDERS (Manufacturers and Trade Names)

Aldur Corp., Brooklyn, N. Y.
Bakelite Corp., New York, N. Y.—Bakelite—157
Carbide & Carbon Chemicals Corp., New York, N. Y.—Vinylite
Celluloid Corp., New York, N. Y.—Lumarith
Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.—Coltrock—176
Columbia Phonograph Co., Bridgeport, Conn.—278-279
Durite Plastics Div. of Stokes & Smith Co., Philadelphia, Pa.—Durite
General Plastics, Inc., N. Tonowanda, N. Y.—Durez—166-167
Makalot Corp., Boston, Mass.
Resinox Corp., New York, N. Y.—Resinox—254
Synthetic Plastics Co., Inc., New York, N. Y.—Beetle
Tennessee Eastman Corp., Kingsport, Tenn.—Cellulose Acetate
Toledo Synthetic Products, Inc., Toledo, O.—Plaskon
Unyte Corp., New York, N. Y.—Unyte

PACKAGE DESIGN CONSULTANTS (Independent Art and Studio Organizations)

Arens, Egmont, New York, N. Y.
Allen, Arthur S., New York, N. Y.
Bryan, Goode, Greenville, S C.
Clarke, Rene, New York, N. Y.
Cole, Clarence, New York, N. Y.
Cooper, R. G. Studio, Detroit, Mich.
Dreyfuss, Henry, New York, N. Y.
Dryden, Helen, New York, N. Y.
Epstein, Alvin, Baltimore, Md.
Furman-Gold Co., The, New York, N. Y.
Goold Art Service, New York, N. Y.
Haggstrom, Thelander & Berg, Rockford, Ill.
Hall, Francis Cushing, New York, N. Y.
Hasinger, D. B., New York, N. Y.
Hornung, Clarence P., New York, N. Y.
Iannelli Studios, Park Ridge, Chicago, Ill.
Industrial Design, Inc., New York, N. Y.—184
Jensen, Gustav B., New York, N. Y.
Larison, Ruth Hooper, New York, N. Y.
Leonard. Robert C., New York, N. Y.
Maurer, S. A., New York, N. Y.
Nash, Ben, New York, N. Y.
Package Design Corp., New York, N. Y.—218-219
Picken, Mart Brooks, New York, N. Y.
Sinel, Joseph, New York, N. Y.
Switzer, George, New York, N. Y.
Teague, Walter D., New York, N. Y.
Tower Studio, Chicago, Ill.
Ullman, Martin, New York, N. Y.
Van Doren & Rideout, Toledo, O.

PACKAGE DESIGN SERVICE (Available From Supply Companies)

American Colortype Co., New York, N. Y.
Anchor Cap & Closure Corp., Long Island City, N. Y.
Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133
Arrow Mfg. Co., Inc., Hoboken, N. J.—126
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Brooks & Porter, Inc., New York, N. Y.—276
Brown & Bailey, Philadelphia, Pa.
Burt Co., Ltd., F. N., Buffalo, N. Y.
Cambridge Paper Box Co., Cambridge, Mass.—139
Chicago Molded Products Corp., Chicago, Ill.—153
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Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.—176
Consolidated Safety Pin Co., Bloomfield, N. J.—156
Container Corp. of America, Chicago, Ill.—140
Crescent Engraving Co., Kalamazoo, Mich.—132
Dennison Mfg. Co., Inc., Framingham, Mass.—179
Dupont Cellophane Co., Inc., New York, N. Y.
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Forbes Litho. Mfg. Co., Boston, Mass.—Insert 196-197
Forsman Co., C. H., Inc., New York,
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—168
Foxon Co., The, Providence, R. I.—Insert 184-185
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Gaylord, Inc., Robert, St. Louis, Mo.
Heywood Co., R. R., New York, N. Y.
Holyoke Paper Corp., New York, N. Y.
Howell & Co., F. M., Elmira, N. Y.
Interstate Folding Box Co., Middletown, O.
Kaumagraph Co., New York, N. Y.
Krause, Inc., Richard M., New York, N. Y.—286
Lord Baltimore Press, New York, N. Y. and Baltimore, Md.
Lowe Paper Co., Ridgefield, N. J.—Insert 188-189
Mason Box Co., The, Attleboro Falls, Mass.
Metal Package Corp., New York, N. Y.—172
Michigan Litho. Co., Grand Rapids, Mich.—Insert 206-207
Milprint Products Corp., Milwaukee, Wis.
Milwaukee Paper Box Co., The, Milwaukee, Wis.—282
National Metal Edge Box Co., Philadelphia, Pa.—204
Norton Laboratories, Inc., Lockport, N. Y.
Owens-Illinois Glass Co., Toledo, O.—210-211
Package Paper Co., Holyoke, Mass.
Peerless Roll Leaf, Inc., Union City, N. J.
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Reynolds Metals Co., Inc., New York, N. Y.—Insert 168-169
Richardson-Taylor-Globe Corp., Cincinnati, O.—255
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Sears Paper Box Co., Merle, Danville, Ill.
Sefton National Fibre Can Co., St. Louis, Mo.—256
Shellmar Products Co., Chicago, Ill.
Star Case Co., New York, N. Y.
Sutherland Paper Co., Kalamazoo, Mich.
Sylvania Industrial Corp., New York, N. Y.—269-272
U. S. Printing & Lithographing Co., Cincinnati, O.
Voss Corporation, Karl, Hoboken, N. J.—277
Warner Bros. Co., Inc., Bridgeport, Conn.—273
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Wood, Nathan & Virkus Co., New York, N. Y.—Insert 276-277
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American Paper Goods Co., Kensington, Conn.—134
Chicago Neostyle Envelope Co., Chicago, Ill.
Continental Paper & Bag Corp.—Insert 172-173
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Milprint Products Corp., Milwaukee, Wis. & Philadelphia, Pa.
Munson Bag Co., Cleveland, O.—198-199
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PADS, ABSORBENT PACKING

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Kimberly-Clark Corp., Chicago, Ill.—190-191
Moulded Pulp Corp., Chicago, Ill.
Owens-Illinois Glass Co., Toledo, O.—210-211

PAILS, FIBRE

Arvey Manufacturing Co., Chicago, Ill.
Bloomer Bros. Co., Newark, Wayne County, New York State
Container Corp. of America, Chicago, Ill.—140
Lily Tulip Cup Corp., New York, N. Y.
Marathon Paper Mills Co., Rothschild. Wis.
Master Package Corp., Owen, Wis.
Menasha Products Co., Menasha, Wis.
National Folding Box Co., New Haven, Conn.
Sutherland Paper Co., Kalamazoo, Mich.

PAPER, CHEVIOT

Bradner Smith & Co., Chicago, Ill.
Chicago Paper Co., Chicago, Ill.
Cranmer Co., Harry M., Boston, Mass.

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Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Holyoke Paper Corp., New York, N. Y.
Hughes and Hoffman, New York, N. Y.
Kimberly-Clark Corp., Neenah, Wis.—190-191
Knowlton Bros., Watertown, N. Y.
Kupfer Bros. Co., New York, N. Y.
Matthias Paper Co., Philadelphia, Pa.
Pejepscot Paper Co., New York, N. Y.
Queen City Paper Co., Cincinnati, O.
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Walther & Co., Inc., Brooklyn, N. Y.

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Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Beekman Paper & Card Co., Inc., New York, N. Y.
Bendix Paper Co., New York, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Birge & Son Co., M. H., Buffalo, N. Y.—137
Bradner Smith & Co., Chicago, Ill.
Carpenter Co., L. E., Newark, N. J.
Chicago Paper Co., Chicago, Ill.
Collins Mfg. Co., A. M., Philadelphia, Pa.
Cranmer Co., Harry M., Boston, Mass.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
District of Columbia Paper Mfg. Co., Washington, D. C.
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Harris Importing & Exporting Co., Inc., Glens Falls, N. Y.
Hazen Paper Corp., Holyoke, Mass.—Insert 192-193
Holyoke Paper Corp., New York, N. Y.
Hughes and Hoffman, New York, N. Y.
Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros., New York, N. Y.
McLaurin-Jones Co., Brookfield, Mass.
Marvellum Co., Holyoke, Mass.—Insert 204-205
Matthias Paper Corp., Philadelphia, Pa.
Metz Paper Co., Pawtucket, R. I.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
National Coated Paper Co., Pawtucket, R. I.
New England Card & Paper Co., Springfield, Mass.
Orchard Paper Co., St. Louis, Mo.
Pauli Corp., Karl, New York, N. Y.
Queen City Paper Co., Cincinnati, O.
Royal Card & Paper Co., New York, N. Y.
Schulman Co., Louis, New York, N. Y.
Springfield Glazed Paper Co., Springfield, Mass.
Standard Textile Products Co., New York, N. Y.
Tamm & Co., New York, N. Y.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Inc., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Williams & Co., Inc., Chas. W., New York, N. Y.

PAPER, EMBOSSED METAL

Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Aluminum Co. of America, Pittsburgh, Pa.
Bendix Paper Co., New York, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Bradner Smith & Co., Chicago, Ill.
Chicago Paper Co., Chicago, Ill.
Collins Mfg. Co., A. M., Philadelphia, Pa.
Cranmer Co., Harry M., Boston, Mass.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Harris Importing & Exporting Co., Inc., Glens Falls, N. Y.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Holyoke Paper Corp., New York, N. Y.
Hughes & Hoffman, New York, N. Y.
Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Marvellum Co., The, Holyoke, Mass.—Insert 204-205
McLaurin-Jones Co., Brookfield, Mass.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
Milton Paper Co., New York, N. Y.
New England Card & Paper Co., Springfield, Mass.
Orchard Paper Co., St. Louis, Mo.
Pauli Corp., Karl, New York, N. Y.
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Shulman Co., Louis, New York, N. Y.
Standard Textile Products Co., New York, N. Y.
Tamm & Co., New York, N. Y.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Inc., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Williams & Co., Inc., Chas. W., New York, N. Y.

PAPER, EXCELSIOR

Bennington Wax Paper Co., Bennington, Vt.
Crystal Tissue Co., Middletown, O.
Paterson Parchment Paper Co., Passaic, N. J.—202
Pioneer Paper Stock Co., Chicago, Ill.—209

PAPER, FANCY (Printed)

American Colortype Co., New York, N. Y.
Beekman Paper & Card Co., New York, N. Y.
Bendix Paper Co., New York, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Birge & Son Co., M. H., Buffalo, N. Y.—137
Bradner Smith & Co., Chicago, Ill.
Chicago Paper Co., Chicago, Ill.
Collins Mfg. Co., A. M., Philadelphia, Pa.
Cranmer Co., Harry M., Boston, Mass.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
District of Columbia Paper Mfg. Co., Washington, D. C.
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Harris Importing & Exporting Co., Inc., Glens Falls, N. Y.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Holyoke Card & Paper Co., Springfield, Mass.
Holyoke Paper Corp., New York, N. Y.
Hughes and Hoffman, New York, N. Y.
Keller-Dorian Paper Co., New York, N. Y.
Kimberly-Clark Corp., Neenah, Wis.—190-191
Kupfer Bros. Co., New York, N. Y.
McLaurin-Jones Co., Brookfield, Mass.
Marvellum Co., Holyoke, Mass.—Insert 204-205
Matthias Paper Corp., Philadelphia, Pa.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
National Art Co., New York, N. Y.
New England Card & Paper Co., Springfield, Mass.
Orchard Paper Co., St. Louis, Mo.
Queen City Paper Co., Cincinnati, O.
Royal Card & Paper Co., New York, N. Y.
Schulman Co., Louis, New York, N. Y.
Standard Textile Products Co., New York, N. Y.
Tamm & Co., New York, N. Y.
Tuttle Press Co., The, Appleton, Wis.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Williams & Co., Inc., Chas. W., New York, N. Y.

PAPER, FLINT GLAZED

Bradner Smith & Co., Chicago, Ill.
Chicago Paper Co., Chicago, Ill.
Cranmer Co., Harry M., Boston, Mass.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Holyoke Paper Corp., New York, N. Y.
Hughes and Hoffman, New York, N. Y.
Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Matthias Paper Corp., Philadelphia, Pa.
Metz Paper Co., Pawtucket, R. I.
Queen City Paper Co., Cincinnati, O.
Schulman Co., Louis, New York, N. Y.
Springfield Glazed Paper Co., Springfield, Mass.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Williams & Co., Inc., Chas. W., New York, N. Y.
Wyomissing Glazed Paper Co., Reading, Pa.

Buyers' Directory of the Packaging Industries

For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

PAPER, FRICTION GLAZED

Appleton Coated Paper, Appleton, Wis.
Bradner Smith & Co., Chicago, Ill.
Chicago Paper Co., Chicago, Ill.
Continental Paper & Bag Corp., New York, N. Y.—Insert 172-173
Cranmer Co., Harry M., Boston, Mass.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Holyoke Card & Paper Co., Springfield, Mass.
Holyoke Paper Corp., New York, N. Y.
Hughes and Hoffman, New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Marvellum Co., Holyoke, Mass.—Insert 204-205
Matthias Paper Corp., Philadelphia, Pa.
Metz Paper Co., Pawtucket, R. I.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
National Coated Paper Corp., Pawtucket, R. I.
New England Card & Paper Co., Springfield, Mass.
Queen City Paper Co., Cincinnati, O.
Schulman Co., Louis, New York, N. Y.
Springfield Glazed Paper Co., Springfield, Mass.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Williams & Co., Inc., Chas. W., New York, N. Y.
Wyomissing Glazed Paper Co., Reading, Pa.

PAPER, GELATINE

Bendix Paper Co., New York, N. Y.
Bondy-Herman Co., Chicago, Ill.
Matthias Paper Corp., Philadelphia, Pa.
Stahl, G. S., Philadelphia, Pa.

PAPER, GLASSINE (Plain and Embossed)

Central Waxed Paper Co., Chicago, Ill.
Daniels Manufacturing Co., Rhinelander, Wis.
Deerfield Glassine Co., Monroe Bridge, Mass.
Glassine Paper Co., West Conshohocken, Pa.
Hamersley Mfg. Co., Garfield, N. J.
Hartford City Paper Co., Hartford City, Ind.
Henle Wax Paper Mfg. Co., Inc., The, New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Matthias Paper Corp., Philadelphia, Pa.
McDowell Paper Mills, Philadelphia, Pa.
Milprint Products Corp., Milwaukee, Wis., & Philadelphia, Pa.
Newark Paraffine & Parchment Paper Co., Newark, N. J.
Package Paper Co., Holyoke, Mass.
Rhinelander Paper Co., Rhinelander, Wis.
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Thilmany Pulp & Paper Co., Kaukauna, Wis.
Transpara Co., Rhinelander, Wis.
Westfield River Paper Co., Inc., Russell, Mass.

PAPER, GREASEPROOF

American Products Mfg. Co., New Orleans, La.
American Tissue Mills, Holyoke, Mass.
Celluloid Corp., New York, N. Y.
Central Waxed Paper Co., Chicago, Ill.
Daniels Manufacturing Co., Rhinelander, Wis.
Deerfield Glassine Co., Monroe Bridge, Mass.
Du Pont Cellophane Co., Inc., New York, N. Y.
Eastman Kodak Co., Rochester, N. Y.
Glassine Paper Co., West Conshohocken, Pa.
Hamersley Mfg. Co., Garfield, N. J.
Hartford City Paper Co., Hartford City, Ind.
Henle Wax Paper Mfg. Co., Inc., The, New York, N. Y.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193
Kupfer Bros. Co., New York, N. Y.
McDowell Paper Mills, Philadelphia, Pa.
Menasha Products Co., Menasha, Wis.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Newark Paraffine & Parchment Paper Co., Newark, N. J.
Package Paper Co., Holyoke, Mass.
Paterson Parchment Paper Co., Passaic, N. J.—202
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Rhinelander Paper Co., Rhinelander, Wis.
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Shamut Waxed Paper Co., Holliston, Mass.
Sylvania Industrial Corp., New York, N. Y.—269-272
Thilmany Pulp & Paper Co., Kaukauna, Wis.
Transpara Co., Rhinelander, Wis.
West Carrollton Parchment Co., West Carrollton, O.
Westfield River Paper Co., Inc., Russell, Mass.

PAPER, GUMMED

Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Central Paper Co., Menasha, Wis.
Chicago Gummed Tape Co., Chicago, Ill.
Datz & Son, A. S., Philadelphia, Pa.
Dennison Mfg. Co., Framingham, Mass.—179
Edgewater Paper Co., Menasha, Wis.
Ever Ready Label Corp., New York, N. Y.—Insert 188-189
Holyoke Paper Corp., New York, N. Y.
Krause, Inc., Richard M., New York, N. Y.—286
McLaurin-Jones Co., Brookfield, Mass.
Mid-States Gummed Paper Co., Chicago, Ill.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Peerless Paper Specialty Co., Philadelphia, Pa.
Rexford Paper Co., Milwaukee, Wis.
St. Louis Sticker Co., St. Louis, Mo.
Shuman Co., Frank G., Chicago, Ill.
Tablet & Ticket Co., The, Chicago, Ill.

PAPER, IMITATION LEATHER

Birge & Sons Co., M. H., Buffalo, N. Y.—137
Carpenter Co., L. E., Newark, N. J.
Collins Manufacturing Co., A. M., Philadelphia, Pa.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Harris Importing & Exporting Co., Inc., Glens Falls, N. Y.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Holliston Mills, Norwood, Mass.
Holyoke Paper Corp., New York, N. Y.
Keller-Dorian Paper Co., Inc., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
New England Card & Paper Co., Springfield, Mass.
Paterson Parchment Paper Co., Passaic, N. J.—202
Schulman Co., Louis, New York, N. Y.
Textileather Corp., Toledo, O.—262
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Inc., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.

PAPER, KRAFT

Bogalusa Paper Co., Bogalusa, La.
Brown Co., Portland, Me.
Continental Paper & Bag Corp., New York, N. Y.—Insert 172-173
International Paper Co., New York, N. Y.
Mosinee Mills, Chicago, Ill.—197
Thilmany Pulp & Paper Co., Kaukauna, Wis.
Tomahawk Paper Co., Chicago, Ill.

PAPER, LITHOGRAPHED, FANCY

Addison Litho. Co., Rochester, N. Y.
American Colortype Co., New York, N. Y.
American Label Co., The, New York, N. Y.
Central Litho. Co., Cleveland, O.
Heywood & Co., R. R., New York, N. Y.
Holyoke Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Michigan Litho. Co., Grand Rapids, Mich.—Insert 206-207
Schmidt Litho. Co., Theo. A., Chicago, Ill.
Schmitt & Co., Inc., Geo., Brooklyn, N. Y.
Trautmann-Bailey & Blampey, New York, N. Y.
U. S. Printing & Litho. Co., Cincinnati, O.
Williams & Co., Inc., Chas. W., New York, N. Y.

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Buyers' Directory of the Packaging Industries

For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

PAPER, METALLIC COATED (Plain and Embossed)

Aluminum Co. of America, Pittsburgh, Pa.
Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Beekman Paper & Card Co., New York, N. Y.
Bendix Paper Co., New York, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Birge & Sons Co., M. H., Buffalo, N. Y.—137
Bradner Smith & Co., Chicago, Ill.
Chicago Paper Co., Chicago, Ill.
Collins Mfg. Co., A. M., Philadelphia, Pa.
Cranmer Co., The Harry M., Boston, Mass.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Harris Importing & Exporting Co., Inc., Glens Falls, N. Y.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Hughes & Hoffman, New York, N. Y.
Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
McLaurin-Jones Co., Brookfield, Mass.
Marvellum Co., Holyoke, Mass.—Insert 204-205
Matthias Paper Corp., Philadelphia, Pa.
Metz Paper Co., Pawtucket, R. I.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
Miller Paper Co., New York, N. Y.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
National Coated Paper Corp., Pawtucket, R. I.
New England Card & Paper Co., Springfield, Mass.
Paper Affiliates, Inc., New York, N. Y.
Pauli Corp., Karl, New York, N. Y.
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Royal Card & Paper Co., New York, N. Y.
Schulman Co., Louis, New York, N. Y.
Springfield Glazed Paper Co., Springfield, Mass.
Standard Textile Products Co., New York, N. Y.
Tamm & Co., New York, N. Y.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J
Williams & Co., Inc., Chas. W., New York, N. Y.

PAPER, PARCHMENT

Hamersley Mfg. Co., Garfield, N. J.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193
Paterson Parchment Paper Co., Passaic, N. J.—202
West Carrollton Parchment Co., West Carrollton, O.

PAPER, PARCHMENT VEGETABLE

Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193
Paterson Parchment Paper Co., Passaic, N. J.—202
West Carrollton Parchment Co., West Carrollton, O.

PAPER, PLATED

Blackstone Glazed Paper Co., Pawtucket, R. I.
Bradner Smith & Co., Chicago, Ill.
Chicago Paper Co., Chicago, Ill.
Cranmer Co., The Harry M., Boston, Mass.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Holyoke Card & Paper Co., Springfield, Mass.
Holyoke Paper Corp., New York, N. Y.
Hughes & Hoffman, New York, N. Y.
Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Marvellum Co., The, Holyoke, Mass.—Insert 204-205
Matthias Paper Corp., Philadelphia, Pa.
Metz Paper Co., Pawtucket, R. I.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
National Coated Paper Corp., Pawtucket, R. I.
New England Card & Paper Co., Springfield, Mass.
Queen City Paper Co., Cincinnati, O.
Schulman, Louis, New York, N. Y.
Springfield Glazed Paper Co., Springfield, Mass.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Brooklyn, N. Y.
Williams & Co., Inc., Chas. W., New York, N. Y.
Wyomissing Glazed Paper Co., Reading, Pa.

PAPER, SHREDDED

Bennington Wax Paper Co., Bennington, Vt.
Paterson Parchment Paper Co., Passaic, N. J.—202
Pioneer Paper Stock Company, Chicago, Ill.—209

PAPER, VELOUR (Plain, Printed, Embossed)

Birge & Sons Co., M. H., Buffalo, N. Y.—137
Datz Co., A. S., Philadelphia, Pa.
District of Columbia Paper Co., Washington, D. C.
Harris Importing & Exporting Co., Inc., Glens Falls, N. Y.
Holliston Mills, Norwood, Mass.
Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
McLaurin-Jones Co., Brookfield, Mass.
Mosinee Mills, Chicago, Ill.—197
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Schulman Co., Louis, New York, N. Y.
Stahl Co., G. A., Philadelphia, Pa.
Whiting Co., Inc., C. R., Hackensack, N. J.
Williams Co., Chas. W., New York, N. Y.

PAPER, TRANSPARENT CELLULOSE

See Cellulose, Transparent, Moistureproof and Greaseproof

PAPER, WATERPROOF (Fancy, Plain and Embossed)

Artcote Papers, Inc., Irvington, N. J.—Insert 132-133
Bradner Smith & Co., Chicago, Ill.
Celluloid Corp., New York, N. Y.
Cranmer Co., Harry M., Boston, Mass.
Du Pont Cellophane Co., New York, N. Y.
Eastman Kodak Co., Rochester, N. Y.
Edgewater Paper Co., Menasha, Wis.
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Holyoke Paper Corp., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Marvellum Co., The, Holyoke, Mass.—Insert 204-205
McLaurin-Jones Co., Brookfield, Mass.
Middlesex Products Co., Cambridge, Mass.—Insert 220-221
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Orchard Paper Co., St. Louis, Mo.
Paper Affiliates, Inc., New York, N. Y.
Ralston & Co., Inc., W., Niagara Falls, N. Y.
Rexford Paper Co., Milwaukee, Wis.
Reynolds Metals Co., New York, N. Y.—Insert 168-169
Scutan Co., New York, N. Y.
Sisalkraft Co., Chicago, Ill.
Springfield Glazed Paper Co., Springfield, Mass.
Standard Textile Products Co., New York, N. Y.
Sylvania Industrial Corp., New York, N. Y.—269-272
Union Bag & Paper Corp., New York, N. Y.—264
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Inc., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.

PAPER, WAXED

American Bread Wrapper Co., Chicago, Ill.
American Tissue Mills, Holyoke, Mass.
Bennington Wax Paper Co., Bennington, Vt.
Central Waxed Paper Co., Chicago, Ill.
Continental Paper & Bag Corp., New York, N. Y.—Insert 172-173
Crystal Tissue Co., The, Middletown, O.
Detroit Wax Paper Co., Detroit, Mich.
General Waxed Paper Co., Inc., The, Thompsonville, Conn.
Hamersley Mfg. Co., Garfield, N. J.
Henle Wax Paper Mfg. Co., Inc., The, New York, N. Y.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193

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For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

Menasha Products Co., Menasha, Wis.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Newark Paraffine & Parchment Paper Co., Newark, N. J.
Ohio Wax Paper Co., Columbus, O.
Otsego Waxed Paper Co., Otsego, Mich.
Package Paper Co., Holyoke, Mass.
Paterson Parchment Paper Co., Passaic, N. J.—202
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Shamut Waxed Paper Co., Holliston, Mass.
Specialty Paper Co., Dayton, O.
Waterproof Board & Paper Co., Cincinnati, O.
West Carrollton Parchment Co., West Carrollton, O.

PAPER, WRAPPING

Angier Corp., Framingham, Mass.
Bradner Smith & Co., Chicago, Ill.
Brown Co., Portland, Me.
Central Paper Co., Menasha, Wis.
Chemical Paper Mfg. Co., Holyoke, Mass.
Continental Paper & Bag Mills, New York, N. Y.—Insert 172-173
Defiance Paper Co., Niagara Falls, N. Y.
Edgewater Paper Co., Menasha, Wis.
Hamersley Mfg. Co., Garfield, N. J.
International Paper Co., New York, N. Y.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193
Kimberly-Clark Corp., Neenah, Wis.—190-191
Mosinee Mills, Chicago, Ill.—197
Orono Pulp & Paper Co., New York, N. Y.
Paterson Parchment Paper Co., Passaic, N. J.—202
Rexford Paper Co., Milwaukee, Wis.
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Robertson Paper Co., Bellows Falls, Vt.
Safepack Mills, Millis, Mass.
Sisalkraft Co., The, Chicago, Ill.
Thilmany Pulp & Paper Co., Kaukauna, Wis.
Union Bag & Paper Corp., New York, N. Y.—264
Weyerhauser Forest Products, St. Paul, Minn.

PAPER, WRAPPING, FANCY TISSUE

Beekman Card & Paper Co., New York, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Birge & Sons Co., M. H., Buffalo, N. Y.—137
Bradner Smith & Co., Chicago, Ill.
Collins Mfg. Co., A. M., Philadelphia, Pa.
Cranmer Co., Harry M., Boston, Mass.
Crystal Tissue Co., The, Middletown, O.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Hampden Glazed Paper & Card Co., Holyoke, Mass.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Holyoke Paper Corp., New York, N. Y.
Hughes and Hoffman, New York, N. Y.
Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Marvellum Co., Holyoke, Mass.—Insert 204-205
Matthias Paper Corp., Philadelphia, Pa.
McLaurin-Jones Co., Brookfield, Mass.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Orchard Paper Co., St. Louis, Mo.
Orono Pulp & Paper Co., New York, N. Y.
Package Paper Co., Holyoke, Mass.
Paterson Parchment Paper Co., Passaic, N. J.—202
Racquette River Paper Co., Potsdam, N. Y.
Royal Card & Paper Co., New York, N. Y.
Schulman Co., Louis, New York, N. Y.
Strathmore Paper Co., West Springfield, Mass.
Tamm & Co., New York, N. Y.
Tuttle Press Co., The, Appleton, Wis.
United Mfg. Co., The, Springfield, Mass.
Walther & Co., Inc., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Williams & Co., Inc., Chas. W., New York, N. Y.

PRESSES, PRINTING (Transparent Cellulose)

Chambon Corp., Union City, N. J.—174
Claybourn Corp., Milwaukee, Wis.
Heinrich, Inc., H. H., New York, N. Y.
Meisel Press Mfg. Co., Boston, Mass.

PASTES

(See Adhesives)

PUMPS, ROTARY & CENTRIFUGAL

Kiefer Machine Co., The Karl, Cincinnati, O.
U. S. Bottlers Machinery Co., Chicago, Ill.—265

RAISED PRINTING

Bennington Wax Paper Co., Bennington, Vt.
Hanograf Corp., New York, N. Y.
Wood, Nathan & Virkus, New York, N. Y.—Virkotype Process—Insert 276-277

REGISTERS, AUTOGRAPHIC AND MANIFOLD

Egry Register Co., The, Dayton, O.
Hamilton Autographic Register Co., The, Hamilton, O.
Standard Register Co., Dayton, O.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
United Autographic Register Co., Chicago, Ill.

RIBBONS (DECORATIVE TYING)

Adirondack Tinsel Mfg. Co., Hudson Falls, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Chicago Printed String Co., Chicago, Ill.
Freydberg Bros., Inc., New York, N. Y.
Hy-Sil Mfg. Co., Revere, Mass.
Milwaukee Printed String Co., Milwaukee, Wis.
National Tinsel Mfg. Co., Manitowoc, Wis.—205
Taft Co., R. C., Chicago, Ill.

ROLL LEAF

All-Purpose Roll Leaf Co., Brooklyn, N. Y.
American Roll Gold Leaf Co., Providence, R. I.—Insert 128-129
Coughlin Manufacturing Co., New York, N. Y.
Dejonge & Co., Louis, New York, N. Y.—Insert 180-181
Diamond Decorative Leaf Co., Staten Island, N. Y.—185
Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
Hastings & Co., Philadelphia, Pa.—185
Kemp Co., W. H., New York, N. Y.
Matthias Paper Corp., Philadelphia, Pa.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Peerless Roll Leaf Co., Union City N. J.
Rauskolb Co., F. W., Medford, Mass.
Swift & Sons, Inc., M., Hartford, Conn.—Insert 128-129

ROLL LEAF STAMPING EQUIPMENT

Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
Peerless Roll Leaf Co., Union City N. J.
Thomson National Press Co., Franklin, Mass.

SCALES, AUTOMATIC CHECK WEIGHERS

Elder & Robinson Co., Chicago, Ill.
Exact Weight Scale Co., Columbus, O.
International Business Machines Corp., New York, N. Y.
Jacobs Bros. Co., Inc., Brooklyn, N. Y.
Merrick Scale Mfg. Co., Passaic, N. J.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Toledo Scale Co, Toledo, O.

SCALES, AUTOMATIC WEIGHING, FILLING

American Machine & Foundry Co., Brooklyn, N. Y.
Consolidated Packaging Machy. Corp., Buffalo, N. Y.—175
Exact Weight Scale Co., Columbus, O.
Ferguson Co., J. L., Joliet, Ill.—182
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—216-217, 221-252
Scale & Machinery, Inc., New York, N. Y.
Stokes Machine Co., F. J., Philadelphia, Pa.—261
Stokes & Smith Co., Philadelphia, Pa.—169-171
Triangle Package Machinery Co., Chicago, Ill.

Buyers' Directory of the Packaging Industries

For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

SCALES, FREIGHT, EXPRESS

American Kron Scale Co., New York, N. Y.
American Scale Co., Kansas City, Mo.
Beckman Bros., Des Moines, Iowa.
Brunner Foundry & Mchny. Co., Peru, Ill.
Buffalo Scale Mfg. Co., Inc., Buffalo, N. Y.
Chicago Scale Co., Chicago, Ill.
Dayton Scale Co., Dayton, O.
Exact Weight Scale Co., Columbus, O.
Fairbanks Co., New York, N. Y.
Fairbanks-Morse Co., Chicago, Ill.
General Automatic Scale Co., St. Louis, Mo.
Howe Scale Co., Rutland, Vt.
International Business Machines Corp., New York, N. Y.
Jacobs Bros. Co., Inc., Brooklyn, N. Y.
Merrick Scale Mfg. Co., Passaic, N J.
National Scale Corp., Chicopee Falls, Mass.
Standard Scale & Supply Co., Pittsburgh, Pa.
Toledo Scale Co., Toledo, O.
Triner Sales Co., Chicago, Ill.

SEALS, EMBOSSED

Arkadia Paper Products Corp., New York, N. Y.
Cameo Die Cutting & Engraving Co., New York, N. Y.—Insert 156-157
Dennison Mfg. Co., Framingham, Mass.—179
Foxon Co., The, Providence, R. I.—Insert 184-185
Grand Rapids Label Co., Grand Rapids, Mich.
Horn, John M., New York, N. Y.
Kaumagraph Co., New York, N. Y.
Krause, Inc., Richard M., New York, N. Y.—286
Lambooy Label & Wrapper Co., Kalamazoo, Mich.
Mason & Sons, F. E., Batavia, N. Y.
Milwaukee Label & Seal Co., Milwaukee, Wis.
Reyburn Mfg. Co., Philadelphia, Pa.
Reynolds Metals Co., Inc., New York, N. Y.—Insert 168-169
St. Louis Sticker Co., St. Louis, Mo.
Shuman Co., Frank G., Chicago, Ill.
Stanley Mfg. Co., Dayton, O.—259
Tablet and Ticket Co., The, Chicago, Ill.
Unique Printed Products Co., Terre Haute, Ind.
Wheeler-Van Label Co., Grand Rapids, Mich.
Wynekoop Co., Walker, Chicago, Ill.—283

SILICATE-OF-SODA

Grasselli Chemical Co., The, Cleveland, O.
Mechling Bros. Chemical Co., Camden, N. J.
Philadelphia Quartz Co., Philadelphia, Pa.
Standard Silicate Co., Cincinnati, O.

SPRINKLER TOPS

Art Tube Co., Irvington, N. J.
Bridgeport Metal Goods Mfg. Co., Bridgeport, Conn.
Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.—176
Consolidated Fruit Jar Co., New Brunswick, N. J.
Consolidated Safety Pin Co., Bloomfield, N. J.—156
Imperial Metal Mfg. Corp., Long Island City, N. Y.
Peerless Tube Co., Bloomfield, N. J.
R. C. Can Co., St. Louis, Mo.—253
Ritchie & Co., W. C., Chicago, Ill.—287
Scovill Manufacturing Co., Waterbury, Conn.
Sun Tube Corp., Hillside, N. J.—258
White Metal Mfg. Co., Hoboken, N. J.
Wirz, Inc., A. H., Chester, Pa.—274-275

STAPLES, WIRE

Acme Staple Co., Camden, N. J.—128
Bostitch Sales Co., E. Greenwich, R. I.—158-159
Hotchkiss Sales Co., Norwalk, Conn.
Parrot Speed Fastener Corp., New York, N. Y.—213

STENCIL BOARD AND BRUSHES

Botts Mfg. Co., Brooklyn, N. Y.
Bradley Stencil Machine Co., St. Louis, Mo.
Diagraph Stencil Machine Corp., St. Louis, Mo.
Garvey Fountain & Ink Co., St. Louis, Mo.
Ideal Stencil Machine Co., Belleville, Ill.
Marsh Stencil Machine Co., Belleville, Ill.
Shaw Co., The E. C., Cincinnati, O.

STOPPERS, BOTTLE

Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133
Mundet Cork Corp., Brooklyn, N. Y.—196
Pennsylvania Glass Products Co., Pittsburgh, Pa.
Spring Stopper Co., New York, N. Y.
Wirz, Inc., A. H., Chester, Pa.—274-275

STOPPERS, RUBBER

Anchor Cap & Closure Corp., Long Island City, N. Y.
Armstrong Cork & Insulation Co., Cork Division, Lancaster, Pa.—133

STRAPPING, BOX

Acme Steel Co., Chicago, Ill.—125
Gerard Co., Inc., Chicago, Ill.
Signode Steel Strapping Co., Chicago, Ill.
Stanley Works, New Britain, Conn.
Tennant & Sons, C. W., New York, N. Y.

STRING, PRINTED

Chicago Printed String Co., Chicago, Ill.
Milwaukee Printed String Co., Milwaukee, Wis.
National Tinsel Mfg. Co., Manitowoc, Wis.—205

TAGS, AND MERCHANDISING SHIPPING

Cambridge Paper Box Co., Cambridge, Mass.—139
Dennison Mfg. Co., Framingham, Mass.—179
Foxon Co., The, Providence, R. I.—Insert 184-185
International Tag Co., Chicago, Ill.
Little Co., John W., Pawtucket, R. I.
May Co., The J. L., New York, N. Y.
Milwaukee Printing Co, Milwaukee, Wis.
Reyburn Mfg. Co., Philadelphia, Pa.
Whitney Tag Co., Inc., New York, N. Y.

TAPE, ALL TYPES

(See Gummed Tape)

TAPE, ADVERTISING (Ribbon)

See Ribbons(Decoraitve Tying)

TESTERS, PAPER AND BOARD

Cady & Co., E. J., Chicago, Ill.
Foreign Paper Mills, Inc., New York, N. Y.
Perkins & Son, Inc., B. F., Holyoke, Mass.
Thwing Instrument Co., Philadelphia, Pa.

TUBES, COLLAPSIBLE

(Aluminum, Lead, Tin and Alloys)

Aluminum Co. of America, Pittsburgh, Pa.
Art Tube Co., Irvington, N. J.
Atlantic Mfg. Co., Newark, N. J.
Atlas Collapsible Tube Co., Chicago, Ill.
Bond Mfg. Corp., Wilmington, Del.—138
National Collapsible Tube Co., Providence, R. I.—206
New England Collapsible Tube Co., New London, Conn.
Peerless Tube Co., Bloomfield, N. J.
Pennsylvania Collapsible Tube Co., Williamsport, Pa.
Standard Specialty & Tube Co., New Brighton, Pa.
Sun Tube Corp., Hillside, N. J.—258
Turner Tube Co., New Brunswick, N. J.
Victor Metal Products Corp., Brooklyn, N. Y.
Wheeling Stamping Co., Wheeling, W. Va.
White Metal Mfg. Co., Hoboken, N. J.
Wirz, Inc., A. H., Chester, Pa.—274-275

TUBES, COLLAPSIBLE, TRANSPARENT, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Corp., Inc., South Orange, N. J.—195

TUBES, PAPER (Mailing, etc.)

Bennington Wax Paper Co., Bennington, Vt.
Cambridge Paper Box Co., Cambridge, Mass.—139

Buyers' Directory of the Packaging Industries

For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

Champion Container Co., Inc., Philadelphia, Pa.
Chicago Paper Tube & Can Co., Chicago, Ill.
Cin-Made Corp., Cincinnati, O.—173
Cleveland Container Co., The, Cleveland, O.—155
Improved Mailing Case Co., New York, N. Y.
International Mailing Tube & Wrapper Co., Brooklyn, N. Y.
Mason Box Co., The, Attleboro Falls, Mass.
National Paper Can Co., Milwaukee, Wis.
Paper Canister Co., Inc., Fernwood, Delaware Co., Pa.
R. C. Can Company, St. Louis, Mo.—253
Ritchie & Co., W. C., Chicago, Ill.—287
Seeley Tube and Box Co., Newark, N. J.
Sefton National Fibre Can Co., St. Louis, Mo.—256
Shoup-Owens, Inc., Hoboken, N. J.
Stecker Paper Box Co., Detroit, Mich.

TUBING, GLASS

Kimble Glass Co., Vineland, N. J.—189

VIALS, GLASS

Kimble Glass Co., Vineland, N. J.—189
Pennsylvania Glass Products Co., Pittsburgh, Pa.

VIALS, UNBREAKABLE, ODORLESS

Hygienic Tube & Container Co., Newark, N. J.
Sillcocks-Miller Co., The, South Orange, N. J.—195

WINDOW DISPLAY

See Lithographers, Box and Carton Manufacturers

WINDOW DISPLAY TRIMMINGS

(Also see various paper headings)

Aluminum Co. of America, Pittsburgh, Pa.
American Tissue Mills, Holyoke, Mass.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Dennison Mfg. Co., Framingham, Mass.—179
Hy-Sil Mfg. Co., Revere, Mass.
Kimberly-Clark Corp., Neenah, Wis.—190-191
Milton Paper Co., New York, N. Y.
Minnesota Mining & Mfg. Co., St. Paul, Minn.—203
National Tinsel Mfg. Co., Manitowoc, Wis.—205
Reyburn Mfg. Co., Philadelphia, Pa.
Reynolds Metals Co., Inc., New York, N. Y.—Insert 168-169

WIRE, REINFORCEMENT

Acme Steel Co., Chicago, Ill.—125
Chicago Steel and Wire Co., Chicago, Ill.
Gerrard Co., Inc., Chicago, Ill.
Seneca Wire & Mfg. Co., Fostoria, O.
Signode Steel Strapping Co., Chicago, Ill
Stanley Works, New Britain, Conn.

WIRE, STAPLING

Acme Staple Co., Camden, N. J.—128
Acme Steel Co., Chicago, Ill.—125
Bostitch Sales Co., E. Greenwich, R. I.—158-159
Dexter Folder Co., New York, N. Y.—141-152
Ideal Stitcher & Mfg. Co., Racine, Wis.
New Jersey Wire Stitching Machine Co., Camden, N. J.
Prentiss Co., Geo. W., Holyoke, Mass.
Saranac Machine Co., Benton Harbor, Mich.
Seneca Wire & Mfg. Co., Fostoria, O.
Wilson Steel Products Co., Chicago, Ill.

WIRE, STITCHING

Acme Steel Co., Chicago, Ill.—125
Bostitch Sales Co., E. Greenwich, R. I.—158-159
Chicago Steel and Wire Co., Chicago, Ill.
Dexter Folder Co., New York, N. Y.—141-152
Ideal Stitcher & Mfg. Co., Racine, Wis.
Morrison Co., Inc., J. L., Niagara Falls, N. Y.
New Jersey Wire Stitching Machine Co., Camden, N. J.
Prentiss, Geo. W., Holyoke, Mass.
Saranac Machine Co., Benton Harbor, Mich.
Seneca Wire & Mfg. Co., Fostoria, O.
Wilson Steel Products Co., Chicago, Ill.

WRAPPERS, BOTTLE (Corrugated)

Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill.—140
Gair Co., Robert, New York, N. Y
Gaylord Co., Robert, St. Louis, Mo.
Hinde & Dauch Paper Co., Sandusky, O.
Kimberly-Clark Corp., Chicago, Ill.—190-191
Owens-Illinois Glass Co., Toledo, O.—210-211
River Raisin Paper Co., Monroe, Mich.

WRAPPERS, FOIL

Aluminum Co. of America, Pittsburgh, Pa.
Johnston Tin Foil & Metal Co., St. Louis, Mo.
Milton Paper Co., New York, N. Y.
Reynolds Metals Co., Inc., New York, N. Y.—Insert 168-169

WRAPPERS, PRINTED GLASSINE

American Tissue Mills, Holyoke, Mass.
Bendix Paper Co., New York, N. Y.
Ben-Mont Fancy Papers, Inc., Bennington, Vt.
Bennington Wax Paper Co., Bennington, Vt.
Central Waxed Paper Co., Chicago, Ill.
Deerfield Glassine Co., Monroe Bridge Mass.
Greene Co., Stephen, Philadelphia, Pa.
Hamersley Mfg. Co., Garfield, N. J.
Hartford City Paper Co., Hartford City, Ind.
Hazen Paper Co., Holyoke, Mass.—Insert 192-193
Henle Wax Paper Mfg. Co., Inc., The, New York, N. Y.
Holyoke Paper Corp., New York, N. Y.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193
Liebs Co., L. A., New York, N. Y.
Lord Baltimore Press, Baltimore, Md.
Menasha Products Co., Menasha, Wis.
Milprint Products Corp., Milwaukee, Wis., & Philadelphia, Pa.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Otsego Waxed Paper Co., Otsego, Mich.
Package Paper Co., Holyoke, Mass.
Paterson Parchment Paper Co., Passaic, N. J.—202
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Shellmar Products Co., Chicago, Ill.
Traver Paper & Mfg. Co., Chicago, Ill.
Westfield River Paper Co., Inc., Russell, Mass.

WRAPPERS, TRANSPARENT CELLULOSE

See Cellulose, Transparent; Converters and Printers

WRAPPERS, WAXED PAPER AND PARCHMENT

American Tissue Mills, Holyoke, Mass
Bennington Wax Paper Co., Bennington, Vt.
Central Waxed Paper Co., Chicago, Ill.
Continental Paper & Bag Corp., New York, N. Y.—Insert 172-173
Hamersley Mfg. Co., Garfield, N. J.
Henle Wax Paper Mfg. Co., Inc., New York, N. Y.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—193
Marathon Paper Mills, Rothschild, Wis
Menasha Products Co., Menasha, Wis.
Milprint Products Corp., Milwaukee, Wis., & Philadelphia, Pa.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 256-257
Newark Paraffine & Parchment Paper Co., Newark, N. J.
Ohio Wax Paper Co., Columbus, O.
Otsego Waxed Paper Co., Otsego, Mich.
Package Paper Co., Holyoke, Mass.
Paterson Parchment Paper Co., Passaic, N. J.—202
Riegel Paper Corp., New York, N. Y.—Insert 252-253
Robertson Paper Co., Inc., Bellows Falls, Vt.
Shamut Waxed Paper Co., Holliston, Mass.
Traver Paper & Mfg. Co., Chicago, Ill.
Waterproof Paper & Board Co., Cincinnati, O.
West Carrollton Parchment Co., West Carrollton, O.

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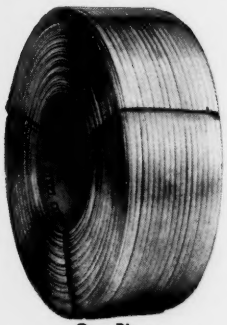
ACME STEEL COMPANY

General Offices, 2834 Archer Avenue, CHICAGO

219—36th St., Brooklyn | 603 Stewart Ave., S. W., Atlanta | 200 Davis St., San Francisco | 114 Railroad Ave., So., Seattle

Manufacturers of Galvanized Stitching Wire, Steel Bands and Strapping Equipment, Stainless and Galvanized Steel Conveyor Belts

SilverStitch STITCHING WIRE



One Piece
5 and 10 pound coils

Three features have made Silverstitch the most popular stitching wire for fibre and corrugated boxes:

1. Accuracy in temper, width and thickness.
2. *Continuous* length five and ten pound coils.
3. A galvanized finish that resists rust longer than any other stitching wire finish.

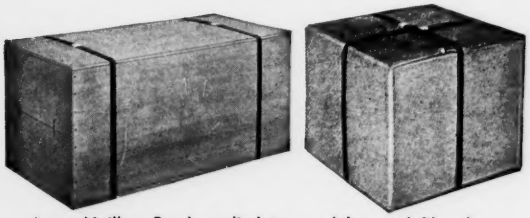
The ten pound coil is widely used because it reduces time spent in changing coils and threading the stitching machine 50%.

Made in the following sizes: .103 x .014, .103 x .017, .103 x .020, .103 x .023, .060 x .024, and .060 x .0205. Send for a free five pound coil of Silverstitch for tryout in your plant. No obligation.

Silverstitch, because of its rust-resisting finish, is especially valuable in stitching soap, food, candy boxes, etc. Liners may be eliminated. Shipments reach dealers free from rust spots.

ACME NAILLESS STRAPPING SYSTEM

Acme Nailless Band is fast, efficient, and economical for the reinforcement of all types of packages. The Acme Seal is the strongest that it is possible to secure through the use of a mechanical hand sealing device.



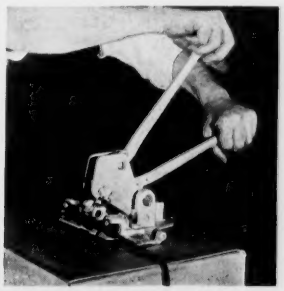
Acme Nailless Band applied to wood box and fibre box

The Acme Method increases the efficiency of the container, insures security in transit and safe delivery. In many cases it

Sealed Joint Acme Nailless Band

makes possible marked reductions in the thickness of container material, thereby reducing freight cost as well as package costs. Manufacturers shipping small packages can save money, in many instances, by strapping several packages together to secure a different express classification and a lower rate. Catalog No. 30 shows many ways to cut shipping costs. Sent free on request.

5 Fibre Boxes
Bundled



The new Acme Combination Strapping Tool which incorporates stretching, sealing, and cutting mechanism. Reduces strapping time 50 to 100% and automatically assures a good strapping job. Send for special literature.

ACME STEEL-MESH CONVEYORS

(In Stainless Steel or Electro-Galvanized Finish)

Acme Steel-Mesh Conveyor Belting is especially adapted for conveying products through drying ovens; for sorting, assembling, washing, and many other manufacturing operations. The open mesh allows free circulation of air, heat, water, and steam. Products may be washed, cooled, sprayed, etc.

Leslie Salt cartons, after labeling, are taken through the dryer on an Acme Conveyor Belt. Warm air blown up through the meshes quickly dries the labels before moisture can penetrate the cartons.

Acme Conveyor Belting is economical and is known for its long life under gruelling conditions. Worn sections are easily replaced. It may be lengthened or shortened by a simple operation. Not affected by alternate drying and wetting.

Acme Belting may be had in any length, and in widths of approximately 4 to 60 inches in multiples of 2 inches.

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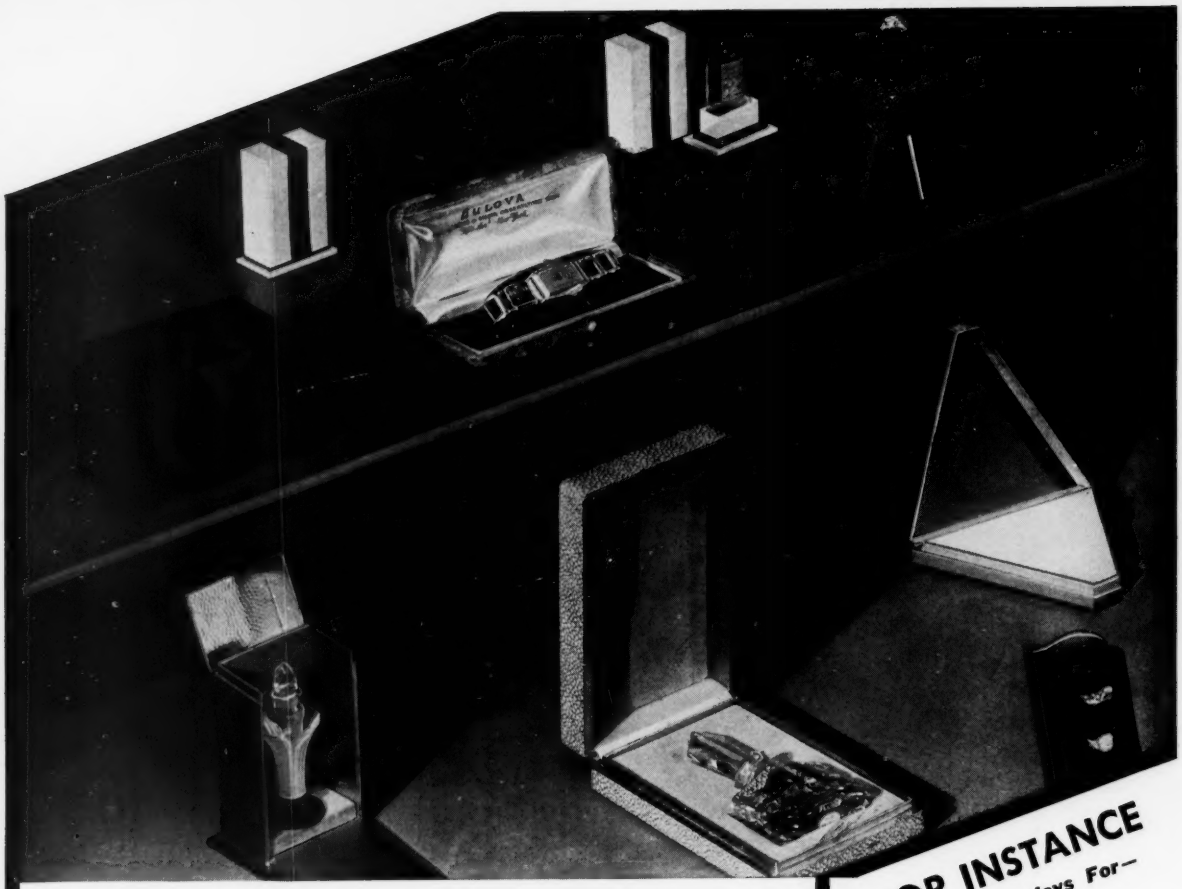

OF EVERY DESCRIPTION

WHETHER your product lends itself best to a fancy paper box, a decorative wood box or a covered metal box, whether the covering material be velvet, leather, artificial leather, lacquered finishes, satin or paper—ARROW is uniquely equipped to work with you . . . Our facilities are so varied, our equipment so extensive and the materials with which we work so comprehensive that we are able to offer our clientele an all inclusive box and display service . . . We invite opportunities of cooperating with you.

ARROW MANUFACTURING COMPANY

FIFTEENTH AND HUDSON STREETS, HOBOKEN, NEW JERSEY

FOR INSTANCE

Boxes and Displays For—

WATCHES
RINGS
NECKLACES
JEWELRY ITEMS
PERFUME
TOILET ARTICLES
LEATHER GOODS
FANCY SETS
PEN AND PENCIL SETS
BRUSH AND COMB SETS
FANCY WOOD BOXES
PRESSED WOOD PULP BOXES
STEEL BOXES
FANCY CARDBOARD BOXES
LACQUERED BOXES
MERCHANDISE DISPLAY STANDS
DISPLAY TRAYS
VELVET DISPLAY FIXTURES
SALESMEN'S SAMPLE TRAYS

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Irresistibly *Appealing*

A Metal of Outstanding Beauty in the Field of Modern Packaging

PLACES YOUR PACKAGES IN THE NON-COMPETITIVE CLASS

Infinite variety of Lined designs and Etched designs in color combinations reproduced on Apollo Metal the latest development in Box Wraps.

Converts Set-up Paper Boxes into attractive utility boxes that will serve as useful and ornamentative pieces in the home.

For applique on Wooden and Folding boxes there is nothing more beautiful. Also used for decoration or inlays on moulded plastics and for dealers' window displays, counter displays, labels and seals, fibre container caps, tag edging, cans, fancy metal containers, vending machines, metal displays and general decorative purposes.

First impressions are an influencing factor in sales. Apollo Metal Boxes make an impression that arouses a desire to possess. They are surprisingly different, have rare charm and beauty, and their advertising value to the manufacturer is incalculable.

Apollo Metal is made in Lustrous and Satin finish and will not stain or tarnish.

Furnished in any size and decorated with any design at a startlingly modest price for a value in box covering that is destined to revolutionize the world of Modern Packaging.

Manufactured by

APOLLO METAL WORKS
LA SALLE ILLINOIS

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ACME STAPLERS
FOR ASSEMBLING CARTONS AND CARDING

CARTONS:

Stapled cartons are STRONGER cartons . . . provide for your product greater protection! Stapling is more economical because it's quicker . . . increases production at no increase in cost! And by doing away with methods which mar the appearance and cover valuable advertising messages, stapling adds to the neatness of your shipping containers.

ACME No. 1 Deep Arm Carton Stapler

National concerns recognize the low cost and PORTABILITY of Acme Staplers. Machines for all types of cartons. Furnished in hand or foot power.

ACME No. 62 Carton Stapler

CARDING:

To display is to sell. The clean, neat, speedy way to attach your merchandise to display cards or stands is with Acme Staplers.

Illustration below shows an actual installation of Acme Machines in an international corporation who produce two million packages a month.

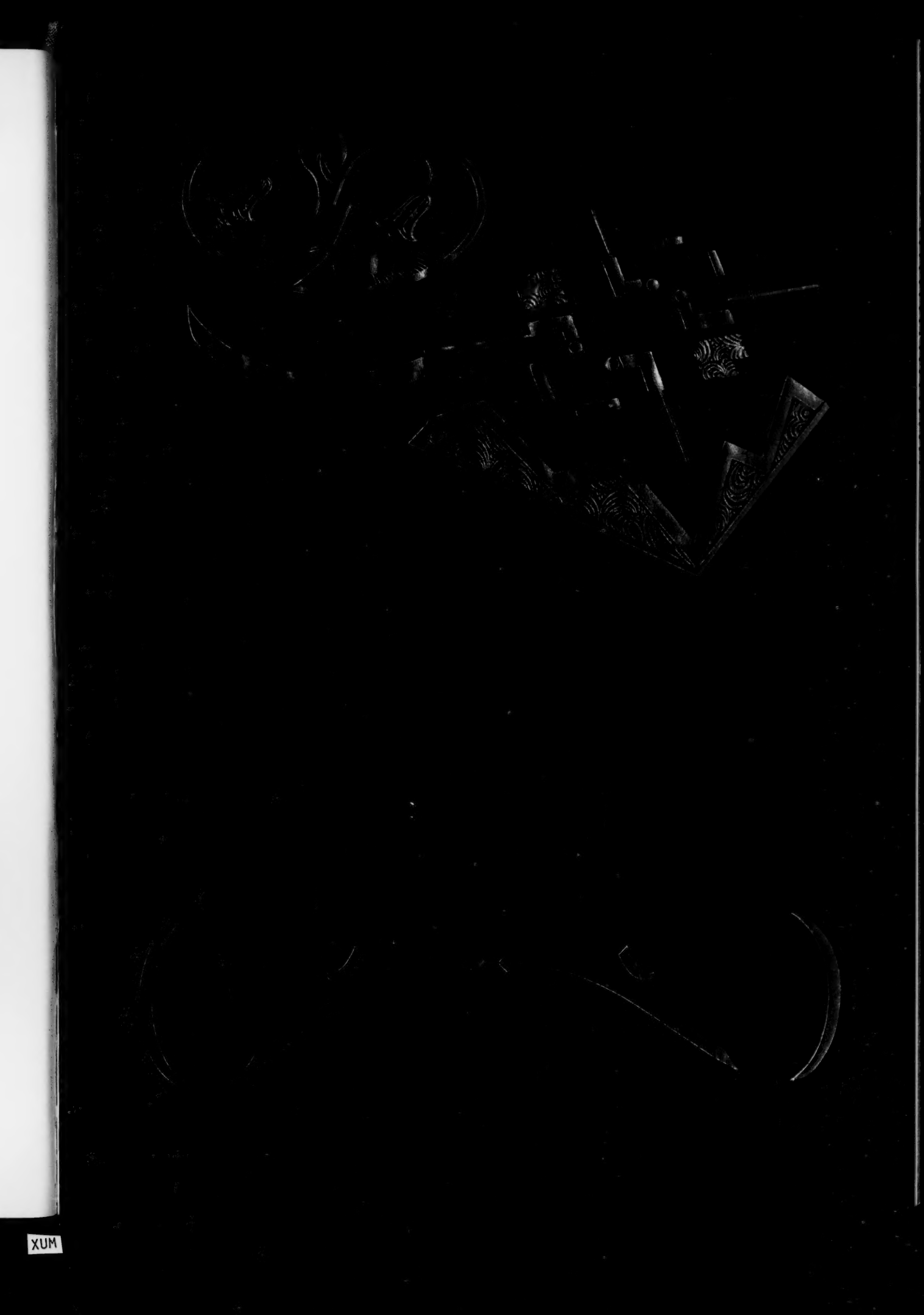
Showing the articles fastened to cards with Acme Staplers

Stapling packages on display cards with Acme Staplers

ACME STAPLE COMPANY

1645 HADDON AVE. CAMDEN, N. J.

THIRTY-NINE YEARS OF MANUFACTURING EXPERIENCE



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THE ARABOL MFG. CO.

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AShland 4-8490

Cable Address
"ARABOL," New York

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Representation in
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AUSTRALIA, CUBA, MEXICO
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Philadelphia, Boston
New Orleans, Atlanta
Seattle, San Francisco
Toronto and Montreal, Can.

Largest and Oldest Adhesive Manufacturers in the World

GLUES, PASTES and GUMS

For all kinds of packaging operations

FOR CARTON SEALING

FOR CARTON WRAPPING

FOR TIN LABELING

FOR GLASS LABELING

FOR SEALING SHIPPING CASES

FOR PAPER BOX MAKERS

FOR PAPER BAG MAKERS

For Special Adhesive Work

For almost 50 years this organization has supplied packaging adhesives to the leading manufacturers and packers of the country.

Whether your packaging proposition requires labeling, wrapping, sealing or other adhesive operations we have the experience and the facilities for supplying the *right* glue to suit each specific need. *Reliability* and *Uniformity* have always distinguished ARABOL products.

We have perfected a special adhesive for every make of machine on the market which applies glue or paste in the process of packaging. Most of these adhesives have been developed in co-operation with the machine manufacturers and are recommended by them for producing best results with their equipment.

Each year we receive thousands of inquiries about glues, gums and pastes for packaging requirements. These inquiries come to us from practically every trade and every field of industry, and they cover a great variety of adhesive operations. We give careful study to each inquiry, and in most cases we can recommend an adhesive that will do exactly the work required. We are often asked to suggest a cheaper glue to take the place of a more expensive product.

All users of adhesives are invited to avail themselves of this service, without obligation. Whether adhesive requirements are simple or complicated we will be glad to offer suggestions based upon our adhesive experience of almost 50 years.

XUM

Molded Caps for Quality Products

IT is not without reason that manufacturers of de luxe products almost invariably select Allen & Hills for the designing and production of their molded caps or closures.

Many of these concerns have been Allen & Hills clients for years. They know that here they are always assured of wholehearted cooperation, exceptional designing ability and unusually high standards in every stage of the manufacture of molded products.

The sales success of many products depend in a large measure on the attractiveness of the caps—their accuracy and perfection in every detail. Caps in harmonizing or contrasting colors are becoming increasingly popular.

Let us talk over your cap or closure problem. We can offer many valuable suggestions for enhancing the appearance of your product with a new, colorful, molded closure. Of course, there is no obligation.

ALLEN & HILLS, INC.
AUBURN, NEW YORK

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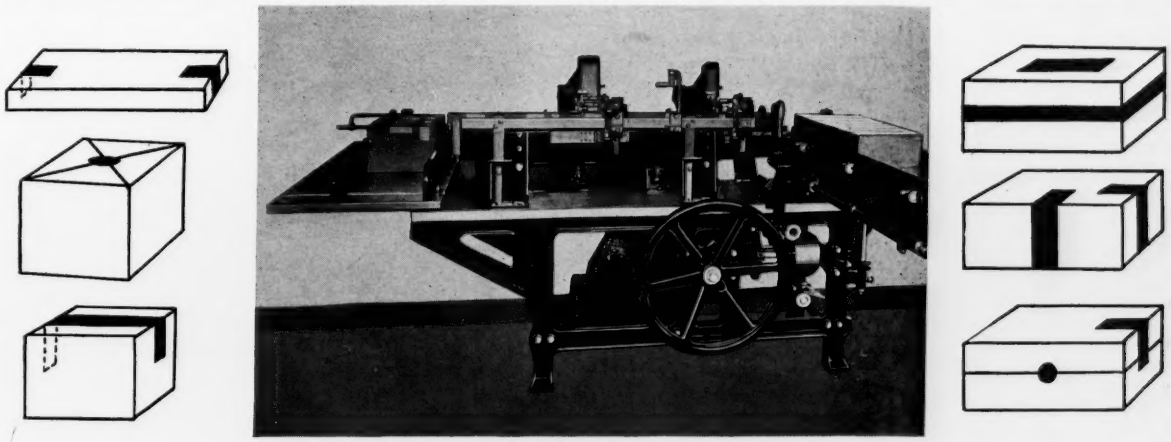
ARENCO MACHINE COMPANY, INCORPORATED

25 West 43rd Street, New York, N. Y.

Designers and Manufacturers of Automatic Packing Machines, Stamping and Labeling Machines



Dependable Machines for Affixing Labels to Paper or Cellophane-Wrapped Boxes or Packages

Arenco Labelers affix with ease labels and stamps to moisture proof Cellophane at high speed. Ever since moisture proof Cellophane became popular as a wrapping material, these machines have been in use for this purpose.

The labels can be applied in a variety of ways, as shown by the sketches above.

Several different types of these machines are obtainable for labeling, depending on the size of boxes handled and whether single or double labels are affixed.

ARENCO TYPE "TAV" DOUBLE LABELER for Small Boxes

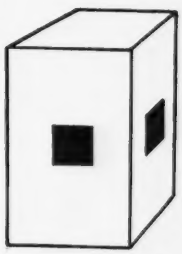
This machine handles the same sized box as the Type TAF Machine, namely, 2" x ½" x 2", up to 6" x 4" x 2".

The TAV Machine is essentially two TAF Machines combined into one, working in synchronism. It was originally designed for the American Tobacco Company to affix both the ordinary revenue stamps and the small oval seals on Melachrino boxes. This machine is a great labor saver. Only one girl operator is needed for speeds up to 120 r.p.m. The labels can be placed in any desired position. The discharge can be arranged to suit the customer's requirements.

The machine is supplied with individual ½ HP motor and a set of tools. Production: 4,000 to 7,000 boxes per hour.

The Arenco Machine Company also designs and builds automatic machines of any desired type. Literature will be sent upon request.

ARENCO TYPE "TAF" SINGLE LABELER for Small Boxes



This machine handles boxes 2" x ½" x 2", up to 6" x 4" x 2". It applies single labels. The labels should always be furnished ungummed and unperforated. The standard machines work with cut labels that are stacked flat in a magazine, but machines can be made to take them from a bobbin, punched with registering holes.

The feed of boxes and labels is accomplished while the machine is in operation, and without loss in production. Only one operator is needed at speeds up to 125 r.p.m. The machine is delivered complete with a ½ HP motor and a set of tools. Production: 4,000 to 7,000 boxes per hour.

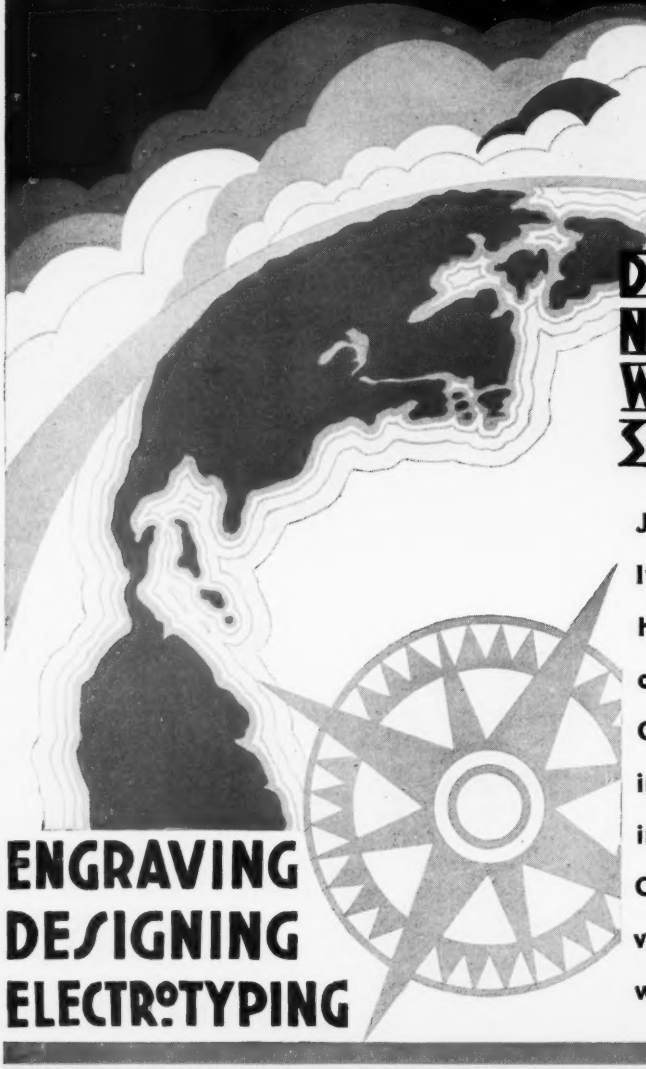
ARENCO TYPE "TAJ" DOUBLE LABELER for Large Boxes

This machine is designed to affix two labels on large sized boxes—sizes 4" x 6" x 1½", to 6" x 9" x 3". Only one operator is needed at speeds ranging from 50 to 75 r.p.m. An individual 1-HP motor is supplied with the machine, which can be made interchangeable to handle several different sized boxes by means of simple adjustments. Production: 3,000 to 5,000 boxes per hour.

Also Machines for Packaging of All Kinds

XUM

GEOGRAPHY — AND GOOD ENGRAVINGS



DISTANCE PRESENTS NO LOGICAL HANDICAP WHERE *GOOD* ENGRAVING SERVICE IS DESIRED

Just what is "distance?"

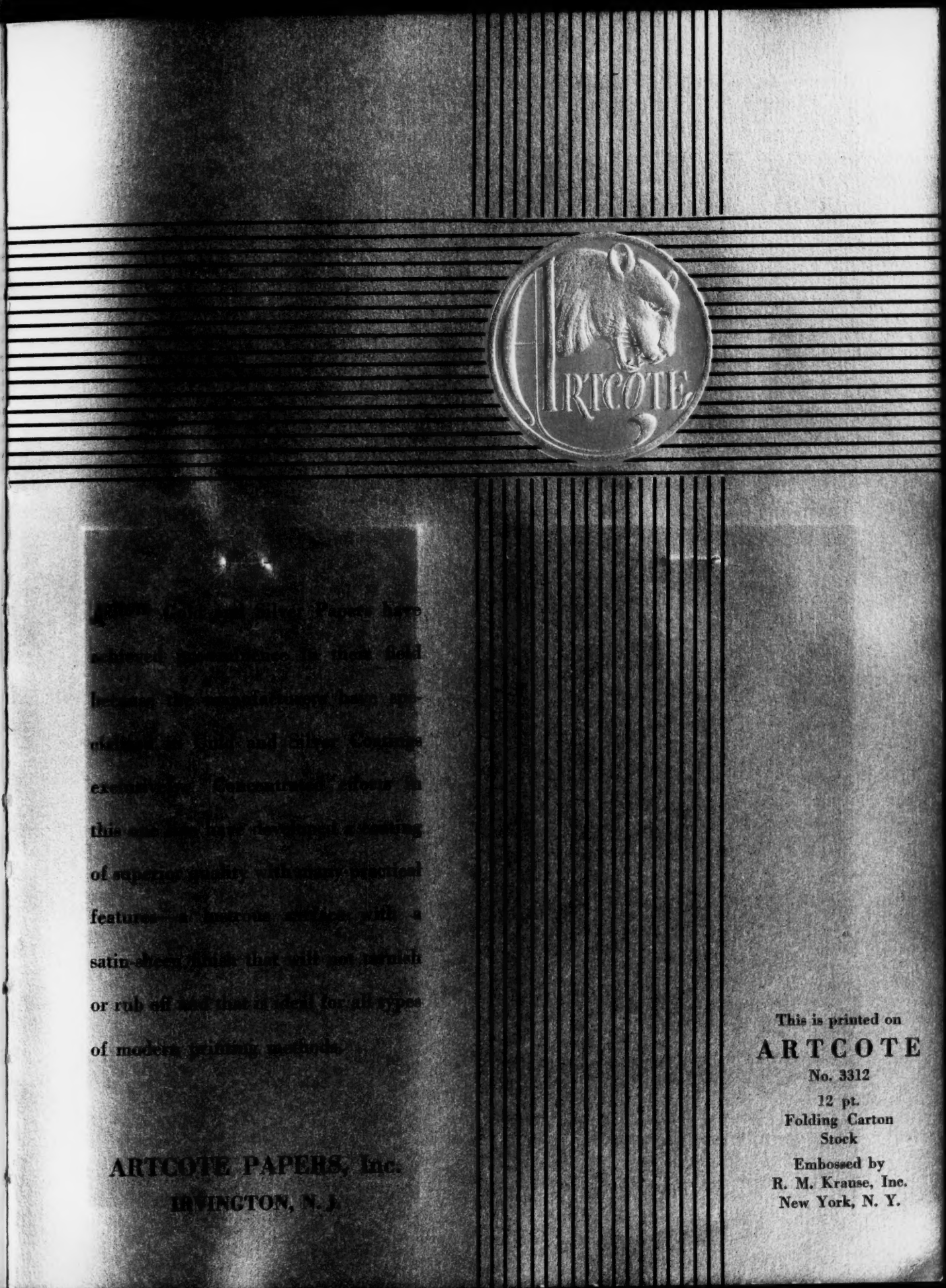
It may be from New York to Paris . . . Hamtramck to Peoria . . or the width of your office. It's the way you look at it. Crescent service crosses many state lines in matters of package design and engraving. Customers who are familiar with Crescent co-operation do not find intervening miles handicapping our ability to work closely with them.

ENGRAVING
DESIGNING
ELECTROTYPING

CRESCENT ENGRAVING COMPANY

KALAMAZOO — MICHIGAN

ENGRAVERS • DESIGNERS • ELECTROTYPERS FOR THE PACKAGING INDUSTRY



ARTCOTE PAPERS, Inc.
IRVINGTON, N. J.

This is printed on
ARTCOTE
No. 3312
12 pt.
Folding Carton
Stock
Embossed by
R. M. Krause, Inc.
New York, N. Y.

XUM

THERE ARE ARTCOTE GOLD AND SILV

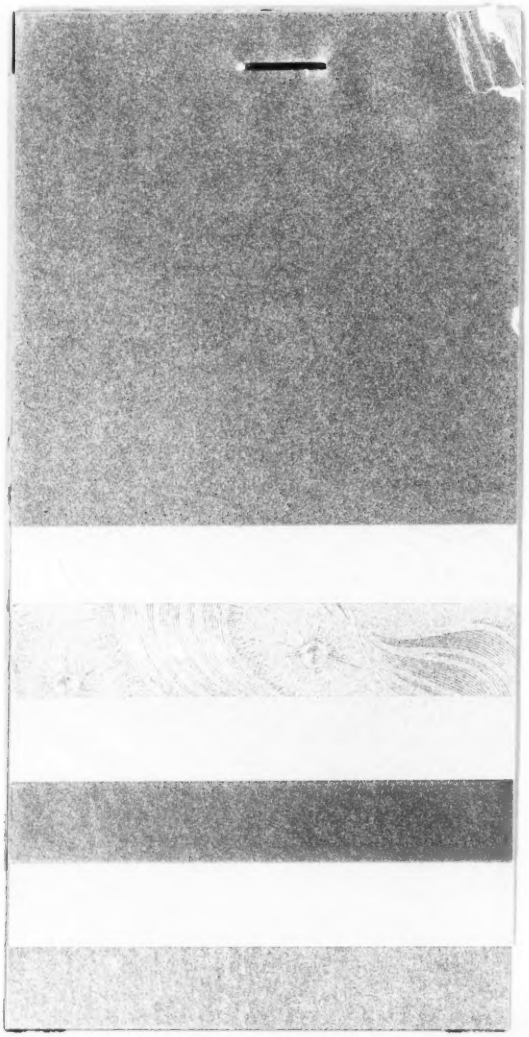
FOR LABELS, FOLDERS, MENUS, TAGS, TICKETS, BOOKLETS AND DIRECT-MAIL MATERIAL

The sample swatches shown below are ARTCOTE Graphic, which is recommended and used for all the above mentioned purposes.

Due to their natural brilliance, smooth surface and remarkably uniform finish, ARTCOTE Graphic papers transcend any bronze, gold or silver printing.

There's a heavier weight of ARTCOTE Graphic known as ARTCOTE Graphic Folding Cover, which comes in 7, 10 and 15 point stock. This is a pure white Bristol.

Sample books showing complete line sent on request.



No. 3360—ARTCOTE Gold white book or printing paper stock

Two of the ARTCOTE embossed designs (Celestial and Aurora) that may be obtained on any ARTCOTE Gold and Silver items

No. 0355—ARTCOTE Silver gummed paper for labels, seals, etc.

No. 3300—ARTCOTE Gold coated white 240 lb./M Blotting stock

No. 0310—ARTCOTE Silver coated 10 point folding cover stock (also in 7 and 15 point)

No. 3324—ARTCOTE Gold coated blank for cutouts

XUM

SILVER PAPERS FOR EVERY PURPOSE

FOR BOXES, BOX WRAPS, FOLDING CARTONS AND DIRECT-MAIL PIECES

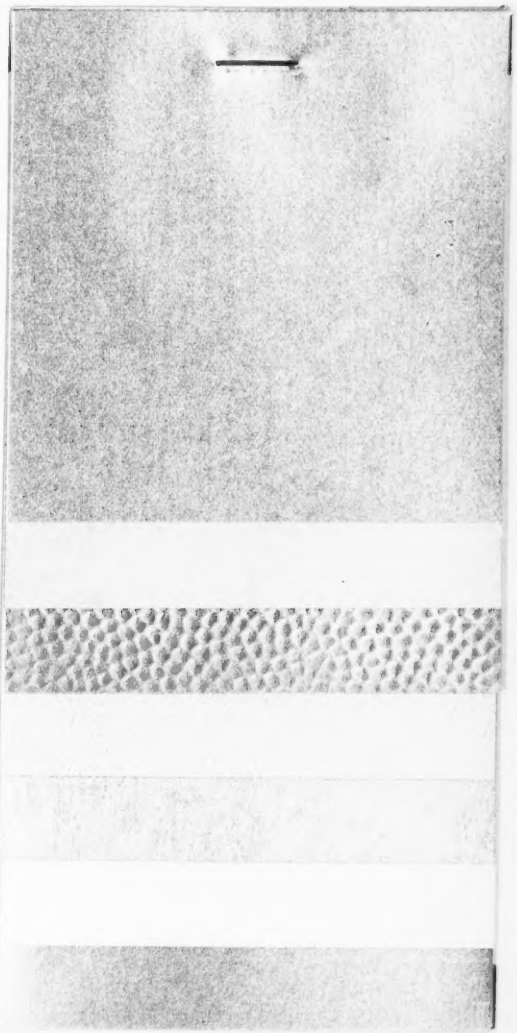
ARTCOTE Gold and Silver papers in weights for box wraps and coverings are procurable in either white or complimentary backs.

By far the most popular choice of discriminating box users have been for these attractive, durable, unvarying quality papers.

ARTCOTE exclusive embossings are available in a number of weights. For folding cartons, ARTCOTE is made in 12, 16, 20 and 24 point thicknesses—in both gold and silver finishes. It can be readily scored, folded, and glued with the assurance of perfect results.

ARTCOTE is noted for its splendid printing and embossing qualities. Line plates and halftones print equally well on its remarkably smooth and uniform surfaces.

Write for sample books of complete line.



No. 3308—ARTCOTE Gold coated yellow back box-wrap paper

No. 0306—ARTCOTE Silver coated grey back box-wrap paper

These popular embossed designs (HAMMERED and SKYTOGEN) may be obtained on any ARTCOTE Gold and Silver stocks

No. 3340—ARTCOTE Gold coated kraft for edgings and inlays

No. 0370—ARTCOTE Silver cloth for box hinges

No. 3312—ARTCOTE folding carton stocks 12 point (also in 16, 20 and 24)

XUM

When you specify [illegible]
Then you can be sure that your [illegible]
play material will fully [illegible]
pectations—in appearance as well as [illegible]

ARTCOTE Papers are made in a wide range of weights and body stocks, and are adaptable for box wraps, linings, platforms, [illegible], labels, embossed seals, window displays, [illegible] covers, announcements, blotters, and direct-mail advertising of every description.

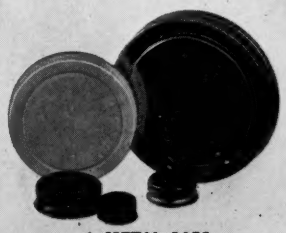
Portfolio of printed specimens will be sent on request, with list of distributors.

ARTCOTE PAPERS, Inc.
IRVINGTON, N. J.

XUM

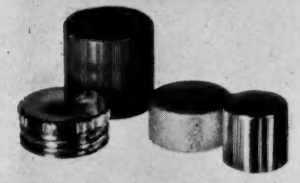
WHAT CLOSURES DO YOU NEED?

Any seal your products or packages need is offered in Armstrong's Closure Line

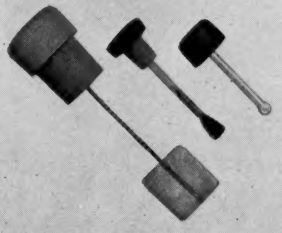


1. METAL CAPS SINGLE-SHELL TYPE

3. METAL CAPS DOUBLE-SHELL TYPE



5. ARTMETAL CAPS



7. DAUBERS, APPLICATORS

1. A full line of inexpensive screw caps for bottles and jars. Sizes range from 15mm. to 120mm. Available in plain or colored finishes. Also supplied with beautifully lithographed private designs or trade-marks.

2. Molded plastic caps in standard and made-to-order designs. A complete range of short, medium, and long skirt caps in sizes from 8mm. to 28mm. Jar covers in 19 sizes from 33mm. to 100mm. Full line of colors.

3. Metal caps and jar covers with straight-sided outer shell concealing threaded inner shell. Sizes range from 15mm. to 100mm. Attractively finished in plain colors or in multi-colored private decorations.

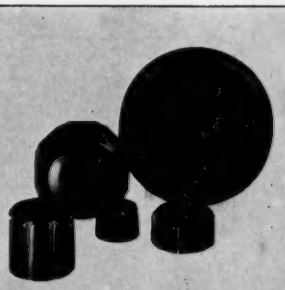
4. In addition to tapered corks, Armstrong offers flanged, straight, wedge top, round top, wood top, and shell corks. Also, Embossed Top Corks with colorfully decorated hardwood tops. All sizes and all grades.

5. Continuous thread, brass base caps made in both single and double-shell types. Standard or special designs in short, medium, and long skirt caps. Wide selection of beautiful metallic and lacquer finishes. Sizes 13mm. to 33mm.

6. Hoods or bands of cellulose applied while moist. Placed by hand over any type of closure, they dry quickly and shrink tightly around the closure and bottle or jar. Made in a wide range of colors and in metallic finishes.

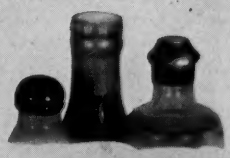
7. Glass rods, quill brushes, wool or cotton daubers, and special devices for applying contents. Can be used with Artmold Caps, Embossed Top Corks, Rubber Stoppers, and plain or wood top corks.

8. Other Armstrong Closures include crown caps for beverages, fruit juices, etc.; cap liners of all types and sizes; rubber stoppers, either tapered or flanged; and bungs for kegs. Armstrong's is a complete line for every sealing need.



2. ARTMOLD CAPS AND JAR COVERS

4. CORKS OF ALL KINDS



6. DU PONT CEL-O-SEAL CAPS AND BANDS

8. CROWNS, LINERS, RUBBER STOPPERS, BUNGS

LABORATORY TESTS AND DESIGN SERVICE WITHOUT OBLIGATION

Take no chances on sealing your packages! Our laboratory will run tests to determine the chemical and physical effects of your products on various closures and liners. We can then recommend the *best* seal for you to use. The completeness of Armstrong's Closure Line assures unbiased recommendations.

Our Package Styling Department will help you with the design of your packages—not only the closures, but containers, labels, and cartons as well.

No charge or obligation for these services. Simply send us your packages and outline your needs. Or ask for samples and prices of Armstrong's Closures.

Armstrong's Closures

Armstrong Cork & Insulation Company ~ 910 Arch Street ~ Lancaster, Pennsylvania

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ANNOUNCING the new 3 star feature
1
IT CAN'T PULL OUT
3
IT CAN'T COME APART
KENSINGTON CLASP
2
IT CAN'T RIP OPEN
ENVELOPE
1
Smooth, flanged metal button anchors clasp through double-thick stock.
2
Reinforced washer, aligned eyelet, stronger clasp, tough stock.
3
Solid gummed bottom flap. Center seam solid line-gummed.
3 STAR FEATURES give you: SAFER MAILING . . . new strong pliable Kensington clasp, which cannot pull out. QUICKER INSERTING — smooth metal clasp anchor button. GREATER DURABILITY — solid gummed bottom flap, solid line-gummed center seam which will not come apart and washer reinforced top flap which will not rip open. ¶ . . . your guarantee of perfect delivery of important mailings.
JOBBERS AND DEALERS
A card will bring sample portfolio of this new Kensington Clasp line.
THE AMERICAN PAPER GOODS COMPANY
Kensington, Conn. • Chicago, Ill. Sales Offices:—New York • Boston • San Francisco

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BURT MACHINE COMPANY

BALTIMORE, MARYLAND

CHICAGO, ILL. NEW YORK CITY SAN FRANCISCO LOS ANGELES

Manufacturers & Designers of Automatic Labeling, Casing & Shipping Container Sealing Machinery

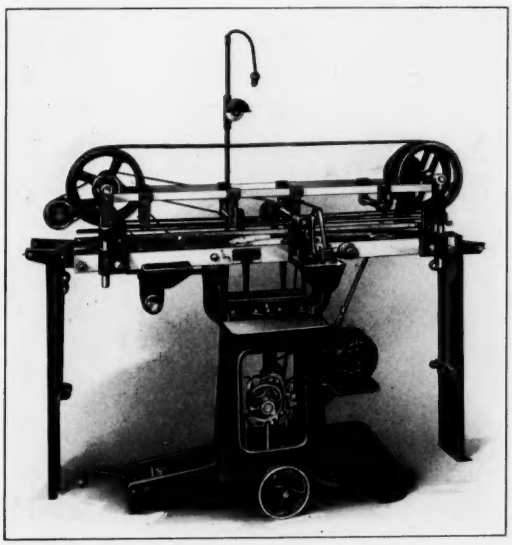
PRODUCTS:

Automatic Labeling, Casing and Sealing Machines.

LABELING MACHINES:

There are several models—one for spot labeling and also applying full length labels to #10 round cans; one for cans with ears and full length labels; one for smaller round containers; one for slip cover cans; and one for applying labels to flat or semi-circular surfaces.

The "A" Models operate at the rate of 200 cans per minute when running at regular speed. Model "A" is for one size of cans, which can also be had for cans of two or more different heights, providing the diameter is the same. The adjustable Model "A" is a multiple diameter type (two or more diameters) suitable also for variable heights and built to order.



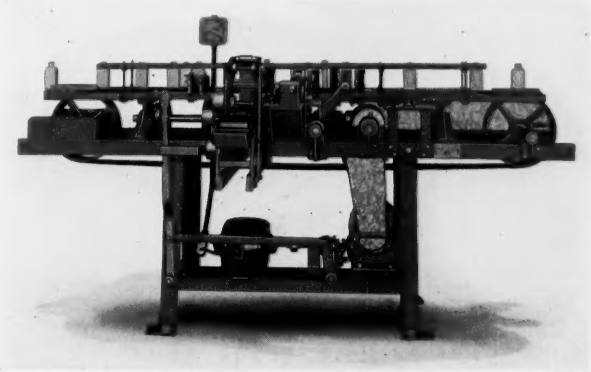
The Model "A" machine, suitable for 4¼" diameter cans with rundowns raised, is about 10' 7" long with the standard length front and back rundowns which are 2' 8" each. Machines for smaller diameter cans are from 1' to 2' shorter. All standard machines are 1' 6" wide and about 4' 5" high.

MODEL "U": Applies a coating of gum over the entire surface of the container to be covered by the label. Especially adapted for requirements which necessitate a gummed all over labeling job. Eliminates the slow shrinking of label process and preserves the lustre of the label. Operates at a speed of about 100 containers per minute.

SHIPPING CONTAINER SEALING MACHINE:

Receives cases from the case packing machine or filled cases from any source, automatically gumming and sealing the same making them ready for the shipping room. Easily adjustable for the range of cases in general use.

MODEL "E": This is for straight line application of labels to flat or semi-circular surfaces, etc. The adhesive is applied over the whole surface to be covered by the label, the latter is then applied, after which pressure is utilized to effect a complete seal.



The single type model operates at a speed of about 60 of the average size containers per minute. A duplex model doubles the speed of the single type, this turning out about 120 per minute. The double type applies both front and back labels in one operation and can be supplied either in the single or duplex style. The Model "E" can be built for two or more size containers within a definite range, this being governed by how large or small the containers are.

The floor space of the single type is 7' 6" long x 3' 4" wide.

Double type: Same length as single—4' 4" wide.

CASING MACHINES:

They assemble the necessary number of packages and then push these into the case. The model shown, known as the ELECTRO, is for round cans and is 6' 10" long, 2' 2" wide. Other models are for rectangular packages.

BURT MACHINES generally fit in with other equipment such as Fillers or Cappers and, from this operation on, provide mechanical handling of the individual package and case.

XUM

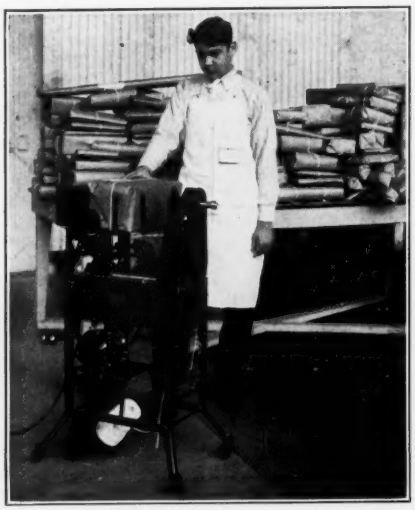
BUNN PACKAGE TYING MACHINES for TYING

Any and all kinds of packages, ranging in size from the neck of a Cellophane Bag to a large bundle of Set-up Boxes.

SPEED. Any package can be tied on any BUNN Machine in a fraction over a second of time. The packages are tied more tightly and more uniformly than can be done by hand. This is a production machine which keeps the product moving.

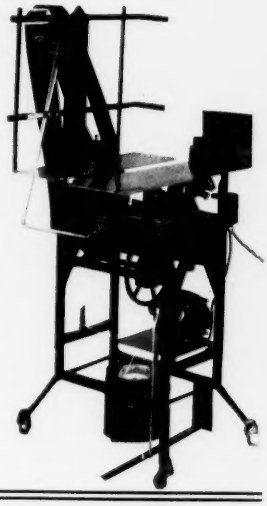
REDUCED COSTS. Twine costs are reduced. The BUNN Machines use only just enough twine necessary to tie the package securely with no waste ends. The BUNN, tying with twine, is the most economical method of securing a package or box, as it takes but one-third of the time necessary in using gummed tape or one-fourth of the time necessary in tying by hand. The BUNN with one operator does the work of from two to five girls.

For tying Mail Order and Parcel Post packages, the BUNN now comes in several different Models. The Double wrap One-way Model shown at the right will tie all varieties of such packages with no change or adjustment for different sizes. The new Triple and Quadruple Wrap Manual Cross Tie Models will also tie a variety of sizes and with more speed than the One Way Model. Extra tightness is also a feature of the Manual Cross Tie group.



For tying all classes of mail, the BUNN Extension Arm Model makes a Double wrap in one direction under compression. The new Triple and Quadruple Wrap Manual Cross Tie Models can also be used for this work.

The BUNN Automatic Turntable Model comes in various sizes to tie small labels, candy boxes, other filled boxes and small uniform packages with a cross tie and knot all in one operation.



The BUNN machines tie with cotton twine, ranging from 4 ply to 16 and 20 ply. A Triple Wrap Model using 16 ply twine is capable of tying packages weighing up to 45 and 50 pounds, such as Magazines, etc.

The BUNN Set-up Box Tying Machine shown at the right ties all sizes of wrapped and unwrapped bundles, with no change or adjustment.

The BUNN Large Frame, Long Arm Model, for tying corrugated and fibre boxes, makes a double wrap tie on both ends in three seconds of time on any and all sizes.

A few of the many industries included in the list of nationally known BUNN users are Candy, Magazine Printers, Carton, Label, Sales Book, Knitting, Mail Order, Patent Medicine, Overall, Envelope, Printers, Publishers, Hosiery, Brush, Bleacheries, Paper Mill, Life Insurance, Laundries, Set-up Box, Parcels Post, and many others.

BUNN Machines are very easy to operate and can be moved about on casters as required. They are all driven by one-sixth horse-power motors.

Ten Day Free Trial — Fully Guaranteed

Write for Description and Prices

B. H. BUNN COMPANY

Manufacturers

76th at Vincennes Avenue — Chicago, U. S. A.

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BIRDSEYE SUEDES
CLUBS
BAGS
BALLS
CATALOG 1933

Setting a New Style

in BOX, CATALOG and BOOK COVERINGS

BIRGESCO SUEDES

in Design

New in CHARACTER of Design.

New in ATTENTION Value.

Patterns created to suit individual requirements, printed in Suede on Gold, Silver or Coated Grounds —also on Book or Cover Stock of usual weights.

A Quality Product by

M. H. BIRGE & SONS CO.

Manufacturers of

BIRGESCO PRODUCTS

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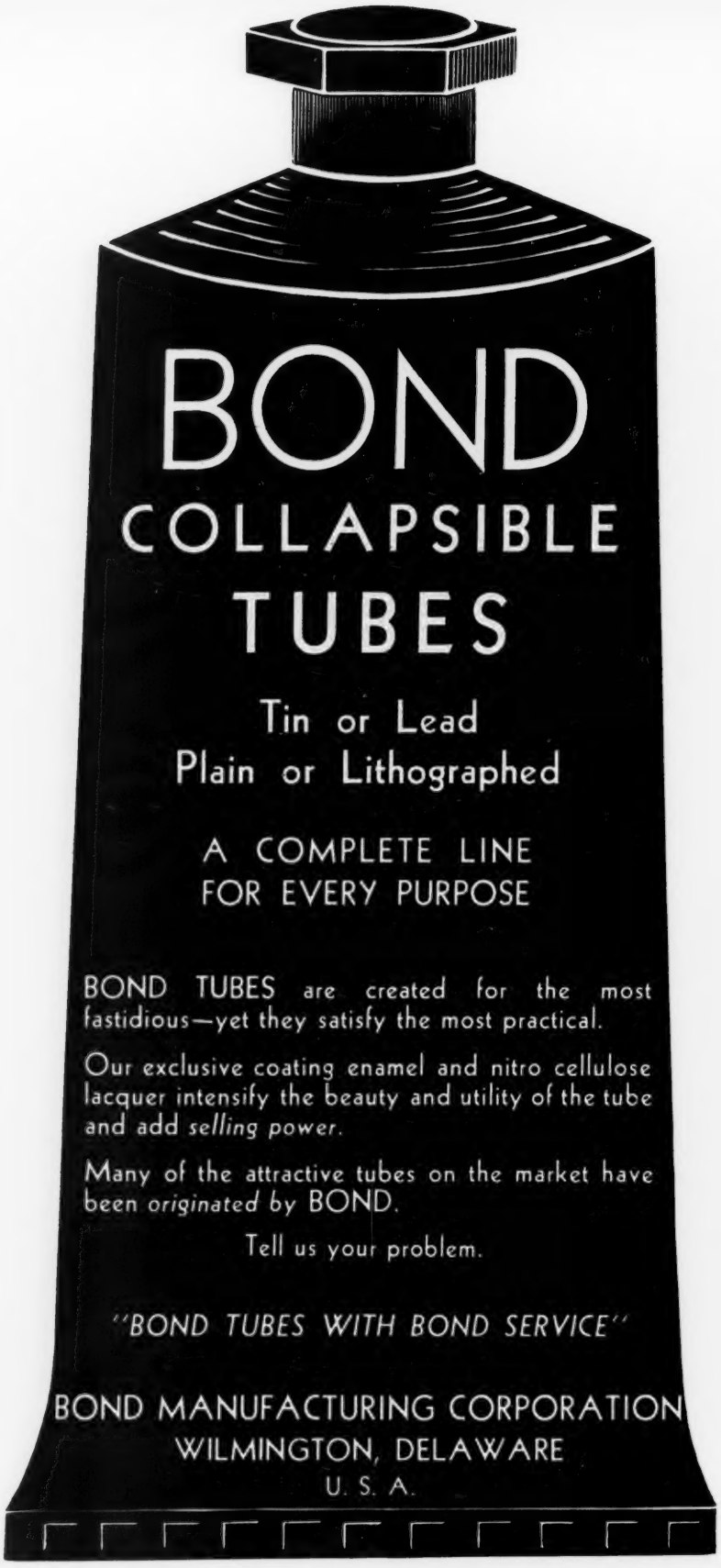
FACTORY AND SALESROOM

NIAGARA, MARYLAND AND SEVENTH STS.
BUFFALO, N. Y.

BIRGESCO SUEDES


BOND
COLLAPSIBLE
TUBES
Tin or Lead
Plain or Lithographed
A COMPLETE LINE
FOR EVERY PURPOSE
BOND TUBES are created for the most fastidious—yet they satisfy the most practical.
Our exclusive coating enamel and nitro cellulose lacquer intensify the beauty and utility of the tube and add *selling power*.
Many of the attractive tubes on the market have been *originated by* BOND.
Tell us your problem.
"BOND TUBES WITH BOND SERVICE"
BOND MANUFACTURING CORPORATION
WILMINGTON, DELAWARE
U. S. A.

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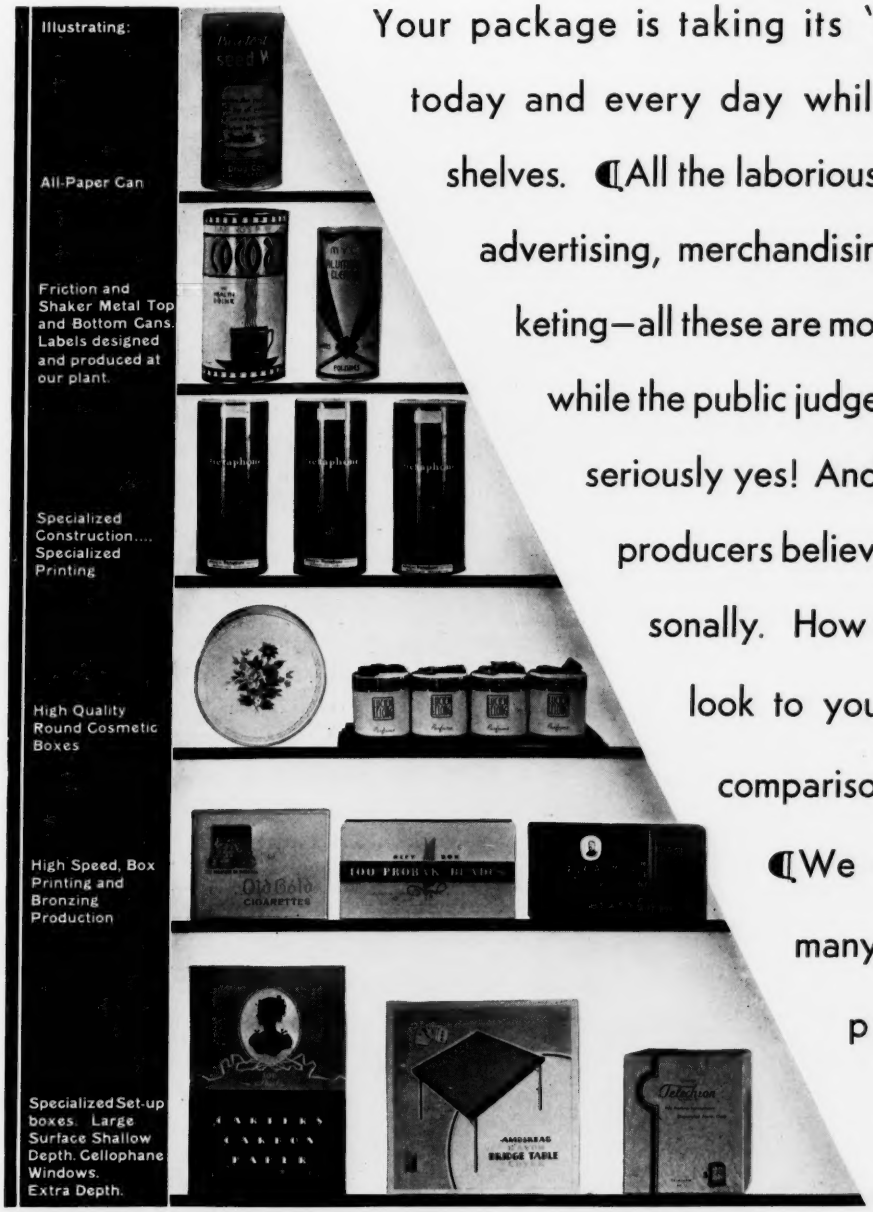
CAN THEY PASS . . . . final exams?


Illustrating:
All-Paper Can
Friction and Shaker Metal Top and Bottom Cans. Labels designed and produced at our plant.
Specialized Construction.... Specialized Printing
High Quality Round Cosmetic Boxes
High Speed, Box Printing and Bronzing Production
Specialized Set-up boxes. Large Surface Shallow Depth. Cellophane Windows. Extra Depth.
Old Gold
CIGARETTES
BRIDGE TABLE
Television

Your package is taking its 'final examination' today and every day while on your dealers shelves. ¶All the laborious studies of research, advertising, merchandising, production, marketing—all these are momentarily left behind while the public judges. ¶Dramatic? Most seriously yes! And more so than many producers believe. ¶Make a test personally. How does your package look to you, as a consumer, in comparison to its competitors? ¶We can help you with many of your packaging problems. Get in touch with our nearest office.

COMPLETE PACKAGE SERVICE

CAMBRIDGE PAPER BOX COMPANY

CAMBRIDGE, MASSACHUSETTS

NEW YORK ❖ CHICAGO

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Craftsmanship in FOLDING CARTONS

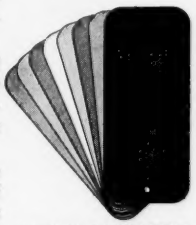
For 35 years, the Sefton organization has been known as producers of fine quality folding cartons. Since 1930, when Sefton became the Folding Carton Division of Container Corporation of America, the same quality standards have been rigidly adhered to. This large plant is concentrated on the one job—folding cartons.

Large capacity—over 6,000,000 cartons per 24 hours—means careful, unhurried production of every order, large or small. Sixty inspections throughout production, plus talent, experience and equipment, mean work that is as perfect as humanly possible.

Our designers create cartons that are not only fresh and sales-building in design, but are practical from the standpoint of production and use—that operate on high speed filling and sealing machines without a hitch.

In addition to the more general type of folding carton, we have developed many sales stimulating specialties. We hold patents on over 140 special features—for your use.

We believe you will find, as so many large companies have—that here is a source of fine folding cartons to satisfy the most particular.



QUALITY BOXBOARDS

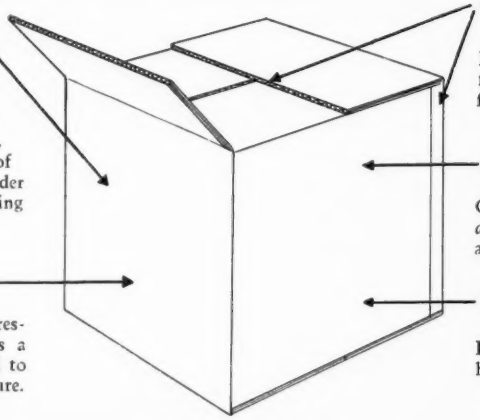
THESE ARE THE REQUIREMENTS OF A GOOD SHIPPING CONTAINER

RIGIDITY

Crushing causes 60% of all shipping container damage. Cylinder-formed linerboard is built-up by layers of fibres, on the laminated principle—providing extreme rigidity, far greater strength than a single sheet of equal thickness. Tests prove the cylinder board gives great resistance to crushing and impact.

COMPACT DENSITY

Close interlacing of fibres, and compression between heavy press rolls makes a solid linerboard. Voids are eliminated to give protection against air and moisture.



STRONG ADHESIVE BOND

Flutes of these corrugated sheets adhere firmly. Tape adheres strongly to the surface of cylinder-formed linerboard.

STRENGTH GIVING GRAIN

Grain in cylinder-formed board runs *around* the box—giving extra resistance against end compression.

SMOOTH PRINTING SURFACE

Heavy calendering and water finish give hard, smooth surface, for clear printing.

Cylinder-former linerboard, assures adequate protection to the products carried. The wise box buyer today is specifying materials, with known performance established by compression test standards.

Six research and design laboratories to help you solve your container problems, complete quality control from raw materials to finished container, geographical coverage and extensive service facilities, a complete line: shipping containers, folding cartons, sulphite wrappers, paper pails, and boxboard—these are offered by the country's most complete packaging service. Write the office nearest you—

CONTAINER CORPORATION OF AMERICA

CHICAGO PHILADELPHIA NEW YORK CLEVELAND DETROIT NATICK, MASS. CINCINNATI PITTSBURGH
MINNEAPOLIS SAN FRANCISCO LOS ANGELES INDIANAPOLIS ANDERSON, IND. BRIDGEPORT, CONN.

Head Office: 111 W. Washington St., Chicago

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SEE CONTINENTAL FIRST

Tremendous Resources for Service

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In Laboratories completely equipped with modern facilities, a large staff of highly trained specialists are ready to solve your specific problems.

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Here you may be shown how a new type of container, or perhaps an improvement on your present one, can help put your product ahead of present-day competition.

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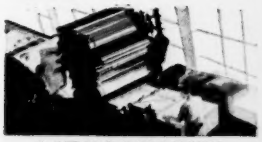
A group of Specialists ready to offer suggestions for improving your design or for an attractive new arrangement, in eye-compelling colors.



LITHOGRAPHY

Batteries of modern lithographic equipment, manned by craftsmen and aided by superior printing plates made in Continental's own Master Engraving Plants, assure the excellence of your containers.

Buying Cans Today Is More Than Simply Checking Bids On Ordinary Type Containers

IN the past year . . . the last few months . . . yes, even in the last few days . . . there have been tremendous advances in packaging and design. Are you familiar with them all? Have your packages kept pace with this fast-changing tempo?

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Too, there are Continental cans available that are widely adaptable, thoroughly protective and economical, in sizes, shapes and styles to meet every need. Then, there's the benefit of the collective experience of over 27 years . . . completely equipped Research Laboratories . . . a Department devoted to the development of new package ideas . . . specialists in Packaging Design . . . skilled lithograph craftsmen and 39 manufacturing plants strategically located from Coast to Coast.

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"It's Better Packed in Tin"

XUM

DEXTER FOLDER CO.

SALES AGENT FOR BLISS, LATHAM, and BOSTON STITCHERS

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PRODUCTS:

Box Stitchers, plain and automatic, for assembly of all types of paper boxes; Bottom, Top, and Combination Stitchers for assembly and sealing of solid fibre and corrugated shipping containers; plain and automatic equipment for stitching the manufacturer's seam on regular slotted containers; Corner Stay Stitchers; Cracker Caddy Sealing Stitchers; Bumper Case Stitchers; Portable Stitchers; Special Stitchers for Stockinettes, Candy, and Wood Fibreboard assembly; Stitchers for strengthening can cases; Foot Power Stitchers; Multiple Head Stitchers; Adhesive Sealing Machines, both automatic and plain compression types; Special Equipment for assembly and sealing of Bliss Boxes; Flange Benders; Staple Removers; and Special Wire Stitching Equipment for processing and handling of various products.

FACTORY:

These products are manufactured by the Boston Wire Stitcher Co. and sold by the Dexter Folder Co.

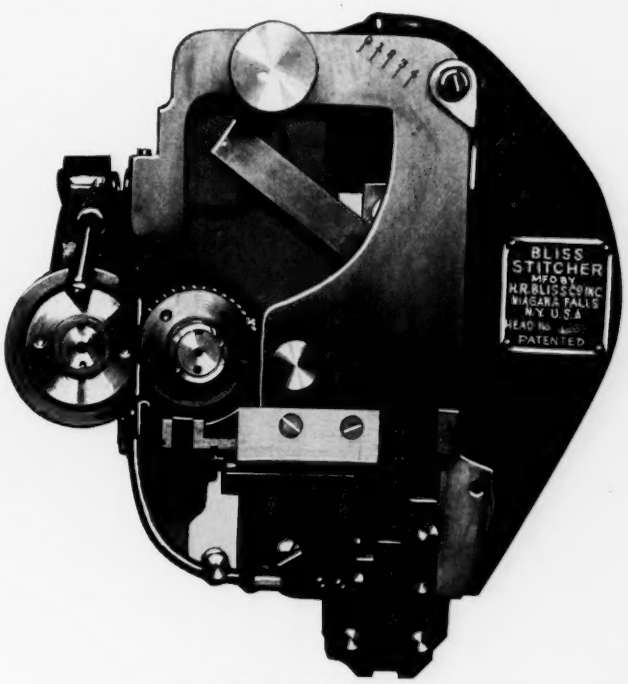

Fig. 1—Heavy Duty Stitcher Head

HEAVY DUTY STITCHERS:

Bliss Stitchers are made of the best and most durable materials, and are positively guaranteed for one year in respect of any defects in materials or workmanship. The stitcher head is made with interchangeable parts for driving any size of wire—bookbinders', HyBar, ribbon, or special round or flat. Quick single adjustments are provided for changing the length of wire drawn for varying thicknesses of stock to be stitched. Machines may be equipped to drive stitches from ¼" to 1⅛" wide, but standard widths are $\frac{5}{16}$", ⅜", and $\frac{7}{16}$" crown.

All Bliss Stitching Machines (except Portables) employ the Bliss (Patented) Stitcher Head shown in partial assembly in Fig. 1. All moving parts are made of steel, hardened when necessary. The cam is of special construction which permits extremely rapid operation. Former slides work on long bearing surfaces. Knives are specially hardened and can be re-ground many times. A special sharp stitch cutting block may be had to give a pointed stitch for use with corrugated board. The entire head may be quickly taken off for repair or replacement by removing three screws only, thus reducing to a minimum the time necessary for repairs.

Bliss Box (or rigid arm) Stitchers are made with throats 15", 25", and 33" in length. The end of the arm contains the hardened steel clincher and may be quickly adjusted up or down for varying thicknesses of stock. All Bliss Stitchers are equipped with motor of any desired electrical specification. The drive consists of a fibre pinion and iron gear reducing noise to a minimum.

The speed of the machine may be varied to suit the nature of the work by changing the motor pinion. The Bliss Stitcher head will form and drive as many as 500 staples per minute, the only limitation on the speed of operation being the ability of the operator to handle the stock through the machine.

All Bliss Stitchers have multiple disc clutches of the automobile type, which permits starting and stopping without vibration. Fig. 2 shows the usual type of foot pedal construction, but for special work this part may be extended to the

Fig. 2—Bliss Box Stitcher

front or brought through the side of the pedestal to permit the operator to sit close to the machine.

Special Box Stitchers are made to order equipped with automatic and semi-automatic feeding and spacing devices, special work tables with gauges, novel shapes and widths of stitch, stitches at 45° or 90° to the arm; also extra long throat machines (up to 48″). They are also obtainable with angle arms for handling extra large boxes, or with folding arms and other special attachments.

MEDIUM DUTY STITCHERS:

The Monitor or Latham type of stitcher is offered for medium duty stitching work and is built around the Latham roll feed stitcher head shown in Fig. 3.

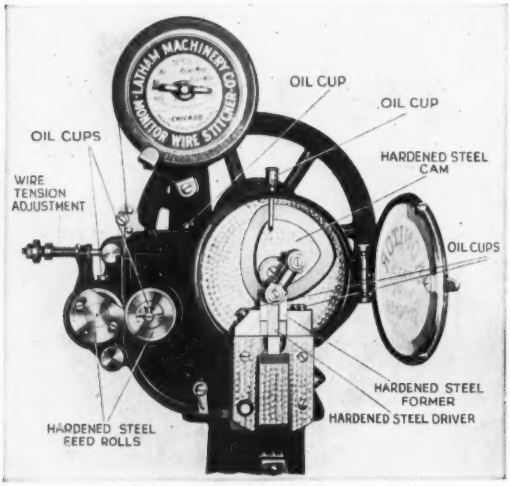

Fig. 3—Monitor Roll Feed Stitcher Head

These machines are widely used for general wire stitcher work, a favorite model being the No. 20 box machine shown in Fig. 4, which is usually built in throat lengths of 12″ and 20″ but can also be had in 32″ and 40″ models. These machines are usually belt driven which makes them very quiet in operation. Special tables, gauges, and other accessories can be furnished for special applications.

Fig. 4—Monitor Box Stitcher

BOSTON STITCHERS:

Fig. 5 shows two of the well known Boston power stitchers, one a box model and the other a bottom stitcher. These machines incorporate the compact Boston narrow stitcher head. Boston stitchers are made with throat lengths of 12″ and 24″.

The Boston foot-power stitcher is made with 10″ throat and is offered for use in stitching light packages, display cards, small bags and other similar work.

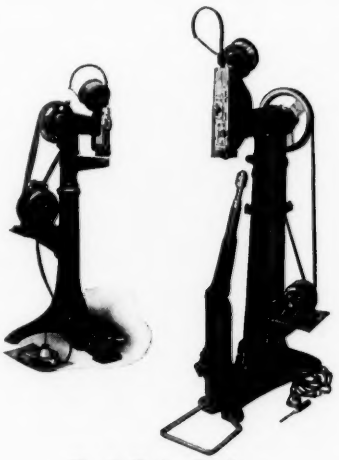

Fig. 5—Boston Stitchers

STITCHER APPLICATIONS:

The general applications of wire stitchers are manifold. The primary use, of course, is in connection with the assembly of all sorts of paper containers, such as hardware boxes, set-up boxes, folding boxes of various kinds, regular slotted containers, Bliss three-piece boxes, berry baskets, display boxes, etc.

Fig. 6 shows a typical folding suit-box stitched on each end, this work being done on single head machines. Duplex or double-stitch heads are also available, as well as equipment incorporating automatic feeders and folders.

Many Bliss and Latham stitchers are in use for attaching handles to shopping bags, as shown in Fig. 7. A special type of stitch is available with a curved top, which grips the handle tightly, but the legs of which can be clinched flat inside the bag.

A relatively new application of stitchers is for sealing special pastry containers made of pulp and covered with cellophane, a special turn table being fitted to the arm, which makes it possible to handle the work with great speed.

Single and multiple-head Latham machines are in general use for stitching book matches in packs, the multiple-head machine being especially popular because of the high operating speed attainable.

Another special use of Boston and Latham narrow head stitchers in multiple is in attaching a wire stitch to milk bottle caps to hold down the opening flap.

Porch and lawn furniture with canvas backs and seats may have the latter attached by wire stitches, with special tables and guides to facilitate handling the work.

XUM

A special Bliss machine is available for stitching the ends of stockinettes used for encasing hams and other pork products before smoking.

The end flaps of mattress boxes are easily sealed with the Bliss portable stitcher, which is quicker and more economical than sealing with tape.

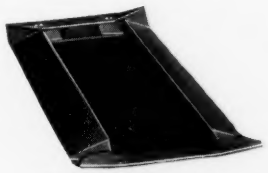

Fig. 6—Folding Suitbox

Stitching machines drawing hump or raised stitches are available for attaching automobile upholstery, and also for use in temporary sealing of containers, loose wires being drawn through the openings in the stitches and tied together.

Fig. 7—Shopping Bag

Separate stitcher heads of Boston, Bliss, or Latham models are available for special applications.

BLISS BOX AND BOTTOM STITCHER:

This is a general purpose machine which has enjoyed a wide sale, since it can be used for regular box stitching and also for bottom stitching of containers. When used for box stitching the post is removed and placed in a convenient socket on the pedestal; when used for bottom stitching the box arm is folded down out of the way. This machine is especially popular in plants using both Bliss No. 4 boxes and regular slotted containers, since the former can be assembled on the box arm while the latter can be bottom stitched on the post. The machine is made in 15 and 25" sizes.

Fig. 8—Box and Bottom Stitcher

The Bliss Horizontal Sealing Stitcher is used for stitching flanged covers onto cracker caddies, while in upright position, at a speed of 20 to 25 per minute. It is also used for stitching certain types of boxes for fruits and bulk baked goods. It is really a top stitcher with horizontal head, equipped with a short blade anvil and special work table.

This machine is also usable for stitching the top flaps of loaded bags of coal and other products, in which case the work table is eliminated and the blade anvil attached to the top of the machine, so that the bag tops can be moved freely between the anvil and the stitcher head.

Another special adaptation of top stitching is the so-called bumper machine, which consists of a head driving a stitch against a horizontal blade anvil. This machine is used for stitching the ends of cases containings automobile bumpers, shade and screen cloth, etc.

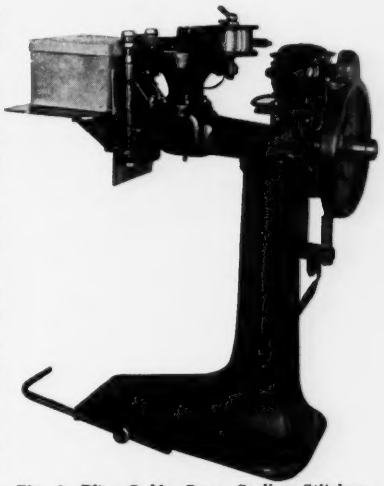

Fig. 9—Bliss Caddy Cover Sealing Stitcher

MONITOR CORNER STAYER:

The Monitor corner-stay stitcher places a right-angle staple around the corners of a box. It is more economical in operation and capable of greater speed than a paper stay or metal edge machine, and produces a stronger box. It is extensively used for fastening the corners of boxes, cracker caddy covers (Fig. 11), and also for strengthening the higher grade set-up boxes which are later covered with paper. These machines are equipped with the Latham roll-feed head and are available for driving either ⅜" or ½" crown staples (measured from the corner of the box to the clinch). Operating speeds on caddy covers are frequently as high as 20 or more complete covers per minute.

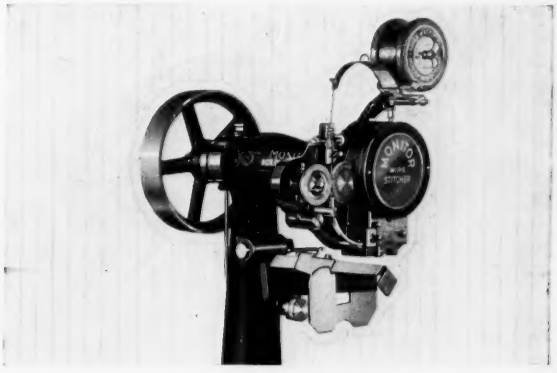

Fig. 10—Monitor Corner Stayer

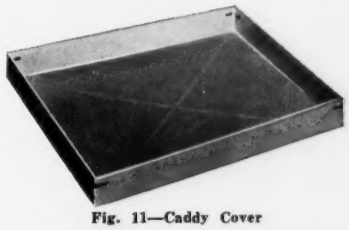

Fig. 11—Caddy Cover

MONITOR NARROW STITCHER HEAD:

The new Monitor narrow stitcher head has been developed to meet the need for a highly efficient, compact stitching unit for special classes of work. The wire is fed vertically, thus economizing in space. The construction is such that the work is easily seen, more space being allowed between the stitcher head and the clincher. One adjustment takes care of varying lengths of staple legs, while another regulates for the thickness of the work.

This stitching unit is especially adapted for multiple-head work, since the heads can be mounted with a common drive and made easily and quickly adjustable for varying spacing. The vertical wire feed permits close spacing of the stitches. Such multiple-head units can be used for a wide variety of container stitching and also for handling special work of many sorts. One application is in the stitching of wooden cleats to fibre box blanks, sufficient heads being employed to completely stitch each cleat in one operation.

Fig. 12—Multiple Head Stitcher

SPECIAL WIRE STITCHING MACHINERY:

Dexter engineers are experts in the application of wire stitching to all kinds of industrial uses. They will welcome the opportunity of investigating the conditions in any plant and of making recommendations as to methods and machines for improving quality and reducing costs.

BLISS ADHESIVE SEALER:

The Bliss Sealer, or compression unit, differs from other similar machines in that both top and bottom belts are driven, thus maintaining even compression and making it possible to pass a single box through if desired. The bottom roller bed can be set at any desired point and the top unit is quickly adjustable up or down by means of a crank. Roller guides are provided on the entrance end of the machine, both top and bottom, which hold the sides of the box firmly in place until the adhesive has taken its initial set. These guides are quickly adjustable for spacing, being moved in or out simultaneously by a crank.

The driving mechanism is a self-contained unit (entirely enclosed) with phosphor bronze gear and hardened steel worm of the best type. An automatic trip is provided, actuated by each entering box, so that the machine only operates as new boxes are pushed over the trip by the operator. The Sealer is furnished with casters and is thus easily moved wherever needed, screws with handwheels being provided to support the machine when in use. The motor is small and can be operated from a lighting socket. All rollers operate on ball bearings.

Standard lengths are 7', 9', 12', 15', and 20', but Sealers may be built for any greater length required.

BLISS AUTOMATIC TOP GLUER AND SEALER:

The Automatic Gluer may be built into Sealers up to 15' long, beyond which it is furnished as a separate unit. The Gluer is operated through a central shaft which also acts as a support, thus economizing on space. The skip gap cam is quickly adjustable for the length of gap required. The machine is portable and can be moved as a unit if desired. An automatic feeder permits only one box to enter at a time. The glue pots are made of aluminum and the glue rollers of brass, carefully fitted into the glue pot. The glue rollers are instantly adjustable both for height and for spacing. Operating and adjusting levers may be on either side of the machine, as desired. This machine is completely automatic and will handle up to 22 cases per minute.

Fig. 13—Bliss Automatic Top Gluer and Sealer

XUM

STITCHERS FOR REGULAR SLOTTED CONTAINERS:

Several types of machines are offered for stitching the manufacturer's seams of regular slotted containers, the one recommended depending upon conditions in the plant where used.

The Bliss R. S. C. stitcher shown in Fig. 14 incorporates the regular high speed Bliss Stitcher Head into a machine with steel work table, provided with quickly adjustable guides. The flaps are positioned and held in place during stitching by the "Bliss Open-Head Device," which is rigidly attached to the stitcher head casting, and is self-supporting, the clincher arm not resting upon the box blank at the moment of stitching as is the case with competing machines. The table and Open-Head Device may be removed and the machine used for regular box work if desired.

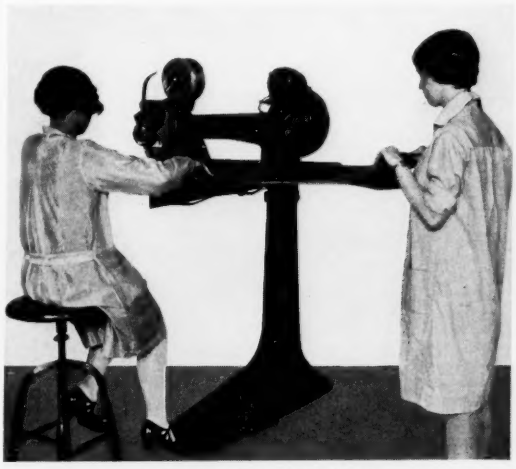

Fig. 14—Bliss R.S.C. Stitcher

Fig. 15 shows a Stitcher for manufacturer's seams with diagonal head which drives a staple at an angle of 45° to the grain of the board. This is particularly desirable when used on corrugated stock as the staple straddles the corrugations and thus the holding power is increased. This type of machine was brought out to meet the increasing demand for corrugated boxes (especially with kraft liners) with the manufacturer's seam stitched instead of taped.

The standard machine is made with throat lengths of 15″, 25″ and 33″, while the angle-head type has throat lengths of 32″, 38″ or 48″ as desired. It is not uncommon to find these machines operated at speeds up to 400 stitches per minute. Open heads are furnished to handle solid fibre stock or corrugated board from single B-flute to double-double A-flute as ordered.

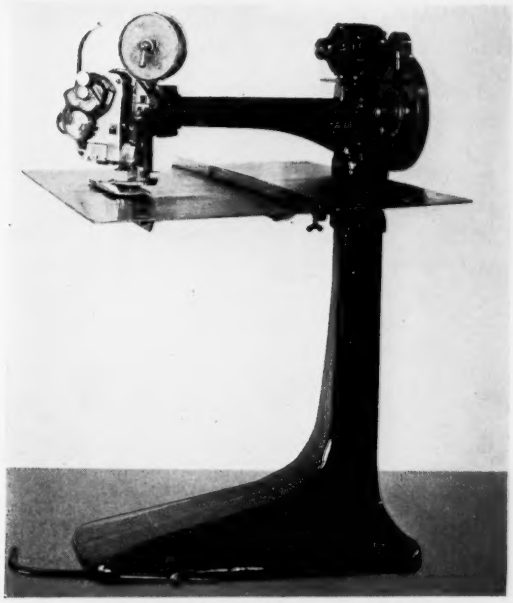

Fig. 15—Bliss R.S.C. Stitcher (Diagonal Stitch)

Fig. 16 illustrates the Monitor No. 52 RSC stitcher which is widely employed because of the fact that it can be used for many different purposes. The stitcher head is mounted on a swivel, so that stitches can be driven with the crowns parallel to or at an angle of 45° or 90° to the seam, as desired. A double-stitch head can be furnished for driving double rows of staples if desired.

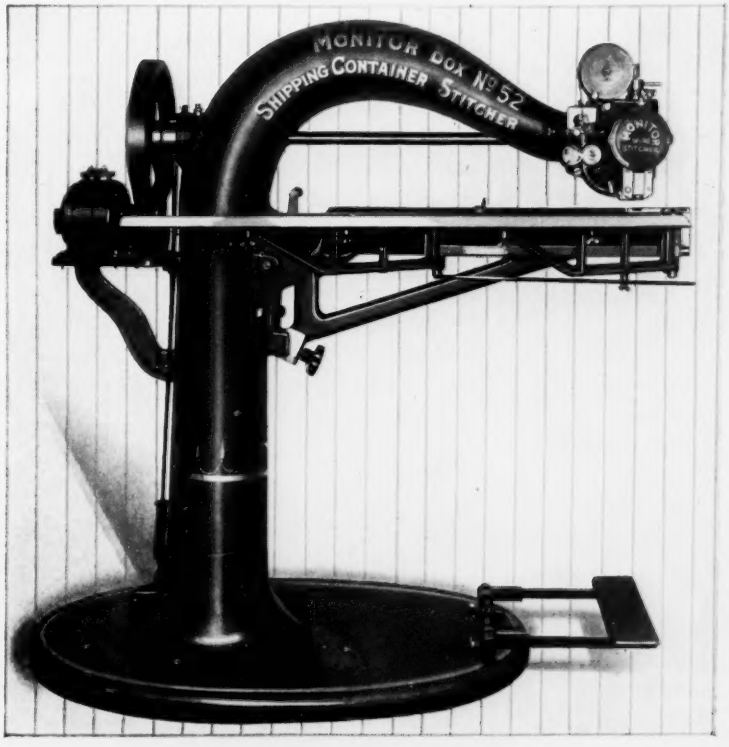

Fig. 16—Monitor R.S.C. Stitcher, Swivel Head

AUTOMATIC R. S. C. STITCHERS:

The Monitor No. 85 automatic container stitcher is in general use in large box mills for stitching the manufacturer's seam of regular slotted containers. The operator has nothing to do but place the folded blanks in position on the feed table, the machine automatically squaring up the box, feeding it through the stitcher and setting the staples, evenly spaced, at a 45° angle. A single or double row of staples may be used, or a single row with tie stitches at each end. Change from one type of stitching to another can be made in less than one minute, while the change from one size box to another can be made in less than 6 minutes. The box is fed into the machine by feed rollers up to a trip gauge which actuates the stitching and spacing mechanism; when completed, the box is ejected by means of high speed rollers. No staples can be driven unless a box is under the stitcher head.

Semi-automatic machines are also available for plants where continuous high production is not required, but where it is desirable to save part of the labor used for hand stitching.

Fig. 18 shows another style of automatic container stitcher, attached to which is a device for automatically folding and feeding a special type of fibre fruit-box. Dexter sales engineers will be glad to make recommendations for machinery to fit special problems of this sort.

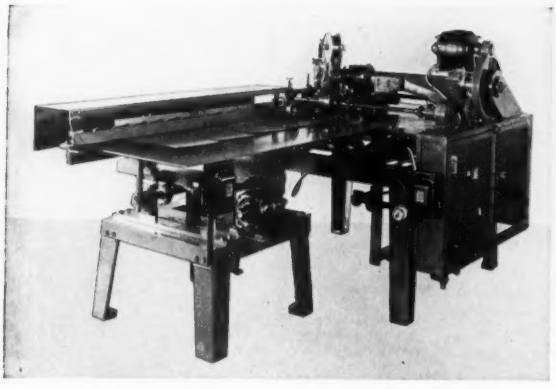

Fig. 18—Special Automatic Folder and Stitcher

Fig. 17—Monitor Automatic R.S.C. Stitcher

CORNER REINFORCING STITCHER:

Regular slotted containers used for can cases are usually made of solid fibre with vertical grain because of the added strength and protection to the goods. Vertical grain cases, however, are very apt to break or split at the corners when handled unsealed.

A Special Bliss Stitcher has been placed on the market for driving a 1⅛" crown staple around all four top corners, the staples being driven into the box blank while flat and made loose so that they will tighten up around the box when the latter is squared up in assembly. Such a blank is shown in Fig. 19.

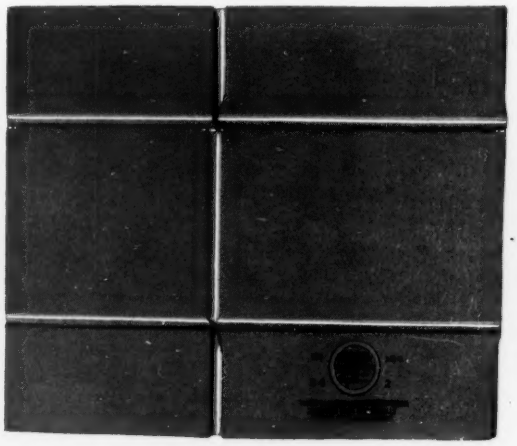

Fig. 19—Vertical Seam Reinforcing Stitch

The use of the Bliss reinforcement obviates the former difficulty with vertical grain boxes and yet is very inexpensive and quick to apply. The work can be done on Bliss Single or Multiple Head Stitchers.

XUM

BLISS BOTTOM STITCHER:

Bliss Bottom Stitchers are offered for heavy production work in stapling the bottoms of regular slotted containers, assembling the bottoms of Bliss Collapsible Boxes, and many other purposes, and are equipped with the heavy-duty Bliss stitcher head. The post can be moved forward by means of a foot lever when large boxes are being placed in position, but for small or medium size boxes, the extra clearance between the head of the post and the stitcher head (peculiar to Bliss) usually makes this operation unnecessary. The head of the post (containing the clincher) can be moved up or down instantly with a few turns of the wrist, no wrench being required. The post contains a heavy spring which permits the clincher to move down when extra thick stock is being stitched. The post will not get out of position in use; and is quickly adjustable in any direction to center the clincher under the stitching head without moving the latter.

Fig. 20—Bliss Bottom Stitcher

This machine is made with 15″ and 25″ throats. The machine is usually set to drive 300 staples per minute and it is not unusual for an operator to bottom stitch 500 or more containers per hour.

This, and other Bliss Stitchers, may be equipped with casters at a slight additional charge, thus making them easily movable around the plant as needed.

MONITOR BOTTOM STITCHER:

The Monitor Bottom Stitcher is a widely used, general purpose machine, somewhat lighter in construction than the Bliss model, and consequently lower in price. It is equipped with the Latham roll-feed stitcher head shown in Fig. 3. This machine is rapid in operation, and has a foot lever for advancing the post when placing the box in position.

Bottom stitching is increasingly used in place of glueing or taping the bottoms of containers because of the speed and economy of the operation, as well as the greater security of the seal obtained. Containers are much more easily loaded and handled if the bottoms have been previously stitched.

Fig. 21—Monitor Bottom Stitcher

SPECIAL BOTTOM STITCHERS:

Multiple stitch machines are now available for plants handling large numbers of containers. One type has two stitcher heads, adjustable as to spacing, and having a double clincher bar fitted to the post head, the ends of the bar also acting as guides. This machine drives two rows of staples at once, one along one end of the box and the other to catch the inside edge of the opposite inner flap. By moving the box on the clincher bar the second two rows may be driven, thus completing the stitching operation.

A second type of machine has a duplex stitcher head driving two staples at once, spaced 2½″ apart. Stitches can be applied in pairs where desired, and the machine is applicable to containers of overlapped construction as well as to those with the outer flaps meeting only.

By using the above machines more uniform stitching is obtained, and production can easily be doubled.

BLISS TOP STITCHER:

The Bliss (patented) Top Sealing Stitcher is used for wire stitching the top flaps of regular slotted containers or Bliss Boxes, and gives a positive seal that holds the case rigidly during shipment and, at the same time, offers a great saving over the cost of taping the joints.

This machine is made with 15″, 25″ and 33″ throats, and may also be equipped with a V-Blade, a diagonal stitch being obtained in this case; also larger boxes can be handled.

The blade anvil is made of heat-treated, forged steel and the clinching end is quickly adjustable up or down without the use of tools. The work table is made of steel with special rolled edge and equipped with steel ball bearings to permit free motion in any direction of the box being stitched. The table is supported by the Bliss quick lift mechanism which is positive in action and instantly adjustable up or down. Movement of the table is facilitated by the use of counterbalancing steel springs. The capacity of the top stitcher depends upon the size of the box and the skill of the operator, and is usually from 3 to 4 cases of average size per minute.

Fig. 22—Bliss Top Stitcher, mounted on castors

BLISS COMBINATION STITCHER:

This machine can be used both for bottom stitching and top sealing and is intended for plants whose production does not warrant the installation of separate Bottom and Top Stitchers. For assembling cases by bottom stitching, the blade anvil of the machine is dropped down against the pedestal by removing a pin, the table is swung to one side, and the post placed in a socket on the base and locked into position. Neither

arm nor table interfere in any way with the operation. After the desired number of cases have been bottom stitched, the post is removed and placed in a socket on the side of the pedestal, the table and blade anvil swung into position and locked in place, whereupon the machine is ready for top stitching of the loaded containers.

Fig. 23—In position for top sealing

The change from bottom stitching to top sealing can be made in less than one minute and, therefore, does not appreciably interfere with production. Bliss Combination Stitchers are much used in such industries as shoe manufacturing, meat packing, and the shipping of foods, shingles, rubber goods, chemicals, etc.

BLISS PORTABLE STITCHER:

Fig. 24—Sealing top flaps of Bliss Box with portable stitcher

The Bliss Portable Stitcher has been designed to meet a long-felt need and is especially recommended for the sealing of containers of unusually large dimensions or exceptional weight which are awkward or impossible to handle on a regular top stitcher. Another important use is for sealing the tops of mixed sizes of cases varying in height and requiring constant readjustment of the table of a standard top stitcher. The outstanding advantage of the portable for such uses is that the cases need not be removed from the conveyor line or handled in any way, the stitcher being taken to the case rather than the case to the machine as at present.

A special "C" shaped blade anvil has been developed for stitching long seams of regular slotted containers or Bliss Boxes, the curved end of the anvil (carrying the clincher) being inserted under the flaps to be stitched and functioning like the Bliss open head device. It differs from the latter, however, in that it can be withdrawn from the end of the stitched seam through a 2" opening, being turned out around the last staple driven. This is one of the most important applications of the machine and one that is coming into considerable use.

BLISS POWER LIFT TOP STITCHER:

The new Bliss Power Lift Top Stitcher (patent applied for) is equipped with a power driven work table operated by a balanced foot pedal placed in front of the machine. A touch of the toe on the front end of the pedal causes the table to be raised at the rate of 12 in. per second while depressing the back end of the pedal lowers it at the same rate. When the foot pedal is in neutral position, the table is rigidly held in the desired position by means of a brake.

A device actuated by the top of the case automatically stops the table at just the right position for the blade anvil to be entered under the stitching flaps, thus speeding up the operation by relieving the operator of the necessity of adjusting the height of the table by hand. The use of the Bliss Top Sitcher with power lift and automatic stop also minimizes the danger of damage to the case or its contents by forcing the same

Fig. 25—Bliss Power Lift Top Stitcher

over the blade anvil when the latter is in an improper position.

This machine can be placed beside a conveyor line or the table can actually be made a part of the line itself, each loaded case as it comes to the stitcher being rolled onto the table, raised by the power lift to the stitching position and dropped to the level of the conveyor by the same means after the flaps have been sealed. This relieves the operator of the fatigue inherent in the lifting of each package by hand and also eliminates the danger of tearing the flaps of the case when the latter is handled when unsupported by the table. An operative using this new type of machine can handle many more cases per day than by the old method and with a minimum of physical effort since a 90-lb. case can be as easily and as quickly manipulated as an empty one.

The power lift is actuated by the same motor that operates the stitching mechanism so that no additional power is required. The latest and most improved types of clutches and brakes are employed, designed to withstand the rough usage of high speed production service.

XUM

BLISS BOXES

The strongest and most economical fibre container on the market today is the BLISS BOX (patented), which is of three-piece construction, comprising a body sheet forming the bottom, two sides and top, and two end panels, flaps being provided for assembly by wire stitching.

Fig. 26—Bliss Boxes

Over thirty-five million BLISS BOXES were used last year by such nationally known concerns as the National Biscuit Co., Endicott Johnson Corp., U. S. Rubber Co., Kingan & Co., Diamond Match Co., Procter & Gamble Co., Bear Brand Hosiery Co., Swift & Co., Ohio Match Co., Sealright Co., Wilson & Co., Dominion Rubber Co., Hecker-H-O Co., Hoberg Paper & Fibre Co., Jacob Dold Packing Co., Scott Paper Co., Armour & Co., Dunn, McCarthy, Inc., Mathieson Alkali Co., and many others.

Some of the products regularly shipped in BLISS BOXES are package foods, shoes, soap, soap powder, canned goods, fresh and smoked meats, dressed poultry, sausages, pail lard, bulk macaroni, matches, toilet paper, packaged chemicals, etc. The use of BLISS BOXES has more than doubled in the last three years.

BLISS BOXES are *stronger* because all four vertical seams are reinforced and because the grain of the board can be run to give maximum resistance to stress on the sides and ends. The strength of the BLISS BOX is concentrated at the edges and corners to withstand rough handling in stacking and transit. Both drum tests and actual service have demonstrated their value for the safe packaging of merchandise.

BLISS BOXES are *economical* because they contain no waste stock, the saving in area of board for a given cubical content varying from 8% to 25% of that required for the old type regular slotted carton. In addition, the extra strength of the BLISS BOX often permits the use of lighter board throughout, or of a combination of lighter body sheet with regular weight end panels. In such instances the saving in weight may be as high as 40%. Freight charges are reduced by the use of Bliss Boxes due to the lighter weight, the saving frequently amounting to from $2.50 to $25.00 per thousand.

Many different styles of BLISS BOXES are available to suit individual requirements, size, nature and weight of contents, and the number used per day. Various types of machines are also available for assembling and sealing these different styles of boxes, the more important of which will be described hereinafter.

BLISS BOXES made of solid fibre or of corrugated board are manufactured under license by all of the leading box mills in the United States and Canada.

The Bliss #2 Box is the most economical type and is largely used where the daily requirement of cases is great. In this style the stitching flanges are a part of the end panels and for assembly are stitched onto the body blank as shown in Fig. 27, a Bliss Double-Head Stitcher usually being employed.

The Bliss #4 Box has the flanges on the body sheet, stitched to the end panels when assembled. This case contains slightly more board than the #2 Style, but has the advantage of having the flanges at the ends of the case which gives added protection for the shipment of products such as canned goods. This box may be assembled on a Bliss Box Stitcher or Bliss Top Stitcher, which is an added advantage to the small user since the expense of buying a Double-Head Stitcher is avoided. It is much used by meat packers and canners, and also by concerns having relatively small requirements of cases per day.

Fig. 27—Bliss Box in partial and complete assembly

The Bliss #4-2 Box has flanges both on the body sheet and the end panels and when assembled has a double reinforcement on all of the vertical seams. This

case is used where exceptional stacking strength or protection of the contents is required, and is especially adapted for packing blankets, sheets, and cotton piece goods, which have heretofore been shipped in wooden boxes weighing from 200 to 500 lbs. each.

The Bliss #24 Box is made of four blanks, the body sheet being split along the middle of the bottom, and is usually assembled at the box mill in one-piece form. It has the advantage for the small user or user of many sizes that it comes to his plant in knocked-down condition but at the same time it provides all of the savings in stock inherent in other types of BLISS BOXES. The bottom is assembled on a Bottom Stitcher or may be taped. This box is returnable for reuse by removing the staples on the bottom with a Bliss Staple Remover.

Under a recent ruling, Bliss boxes can be used for shipping fresh meats up to 130 lbs., thus opening up a new and large field for fibre containers in replacement of wood and wire-bound boxes.

Another recent development is the use of Bliss boxes with the end panels reinforced with wooden cleats to still further increase the carrying capacity and stacking strength. Special Bliss machines are available for the assembly of this type of box, the use of which is increasing rapidly.

Many millions of BLISS BOXES are being used yearly for the packing of products formerly shipped in wood or wire bound containers. In many instances the BLISS BOX is the only type of fibre case that is strong enough to carry the goods, and of course the economy of using the BLISS BOX in place of wood is very great while the saving in freight charges is equally large.

The Dexter Folder Co. will be glad to send its representative to any plant upon request to analyze packing and shipping problems and to recommend the best type of container to meet the conditions, the most advantageous methods of assembling and sealing the same, and the best and most economical type of equipment to employ.

The use of the various types of BLISS BOXES is permitted under Rule 41 of the Consolidated Freight Classification. Methods of assembling and sealing as well as the box construction are covered by U. S. and foreign patents, issued and pending, licenses under which may be obtained through the Dexter Folder Co.

BLISS BOXES are usually sealed by wire stitching, either with center or side overlap, this operation being conducted on a Bliss Top Stitcher either of standard or automatic type.

BLISS BOXES can also be sealed by adhesives using a 2" overlap, on side, center, or end, or by a combination of wire stitching and adhesive sealing. This latter operation can be conducted on fully automatic machinery requiring no hand labor whatsoever after the goods have been placed in the container.

Fig. 28—Bliss Boxes

BLISS SINGLE HEAD ASSEMBLY STITCHER:

The Bliss #4 Box is usually assembled on the machine shown in Fig. 29, which is fitted with a gauge on the arm and also a panel holder to aid the operator in holding the work. The end panels are stitched to the

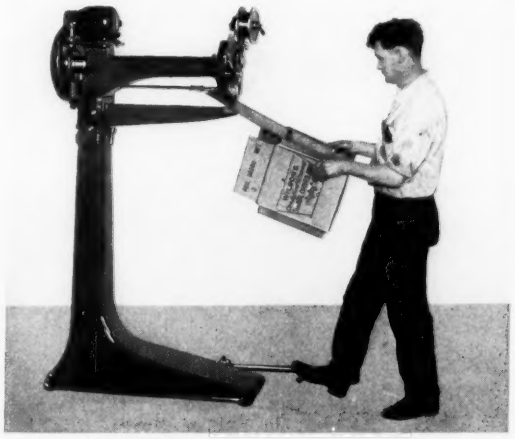

Fig. 29—Bliss Single Head Assembly Stitcher

flanges on the part of the body sheet forming the bottom of the case, after which the side flanges are stitched in place. A skilled operator can easily assemble two average sized cases per minute. This machine may also be used to complete the assembly of the Bliss #4-2 Box, stitching the extra flanges on the end panels after the box has been assembled in #2 form on a Double-Head Stitcher. This machine is also made with a collapsible arm and a removable bottom post, for use in assembling of both Bliss boxes and regular slotted containers in plants where both are used.

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BLISS DOUBLE HEAD ASSEMBLY STITCHER:

This machine (patented) is designed especially for the assembly of Bliss #2 and #4-2 Boxes. It has a work table in the rear holding the body blanks, the end panels being stacked on either side of the operator.

Fig. 30—Bliss Double-Head Assembly Stitcher

An automatic feeding and spacing mechanism is built in so that the operator has only to place the blanks in proper position and step on the pedal, the staples being driven simultaneously in both flanges and properly spaced. Fig. 27 shows a typical Bliss Box after the first seam has been taken, while Fig. 30 shows the machine in operation on the second seam.

This equipment is very fast in operation, three to four or even more complete boxes being assembled per minute by a good operative. It is quickly adjustable for any length or width of box and drives a diagonal stitch which gives maximum strength to the seam.

BLISS V-ARM ASSEMBLY STITCHER:

This machine may be used for assembling Bliss #2 Style cases where the number used will not justify the purchase of a Double-Head Assembly Machine. The V-Arm permits the long body blank to be handled readily, the case being assembled one side at a time. This machine may also be used for assembling the Bliss #4 Box. An operator can assemble one and one-half or more average sized #2 cases per minute.

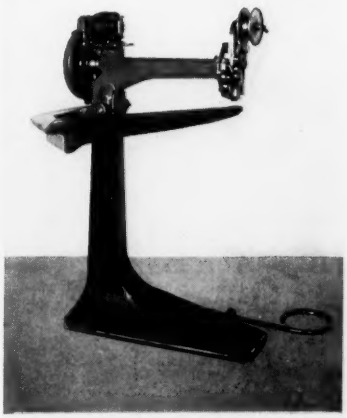

Fig. 31—Bliss Box Stitcher "V" Arm

BLISS TOP STITCHER:

Fig. 32 illustrates the most common method of sealing Bliss Boxes by use of a Bliss Top Stitcher. The center seam and flaps at one end are first stitched, the case then being reversed, and the stitching completed. This gives a very tight and secure closure of the box and average sized cases can be sealed at a rate of three or more per minute. The blade anvil is rigidly supported and will not injure the contents of the case.

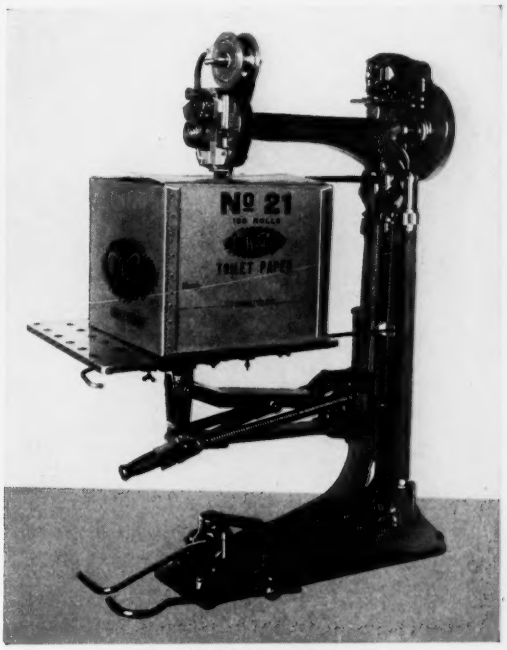

Fig. 32—Bliss Top Stitcher

The Bliss power-lift top stitcher is now widely used for sealing the tops of Bliss boxes, because of the extra speed with which boxes can be handled as well as the convenience of the operation. The stitcher can be placed with its table as part of the conveyor line, the operator having only to touch a foot pedal to raise the box to the stitching position, where it automatically stops in just the right place for inserting the blade anvil.

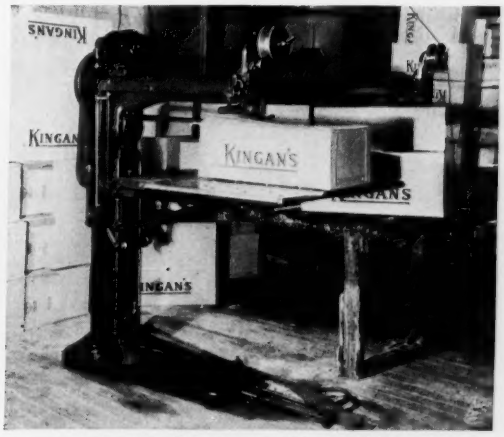

Fig. 33—Bliss Power Lift Top Stitcher

BLISS SIDE SEAM STITCHERS:

Bliss Boxes overlapped at the side may be sealed on a regular Top Stitcher but it is often better to use a Bliss Side Seam Stitcher. This is fitted with a Bliss Open Head Device and will handle six to ten cases per minute.

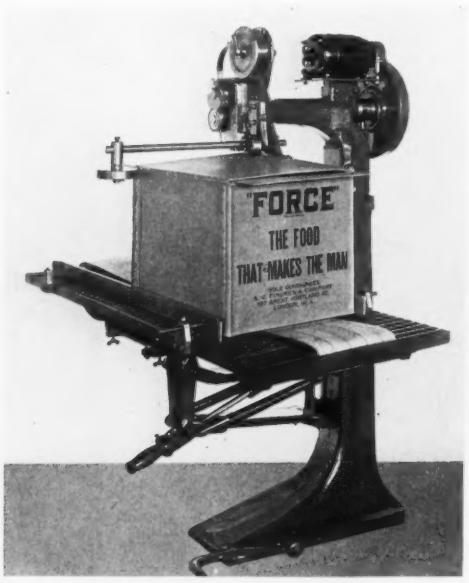

Fig. 34—Bliss Side Seam Stitcher

When large numbers of cases of a single size are to be sealed the Bliss Full Automatic Side Seam Stitcher is recommended. This machine takes the box from the conveyor line, folds the flaps in proper position and feeds the same under the stitcher, which drives and spaces the staples and moves the partially closed box onto another conveyor line. The machine will handle twenty or more cases per minute and requires no labor whatsoever.

BLISS DOUBLE HEAD TOP STITCHER:

The end flaps on boxes from the above machine may be stitched on the Bliss Double-Head Top Stitcher, which automatically feeds the box and drives and spaces the staples, the operative having only to move the case into the machine and see that the blade anvils are properly inserted. The capacity of this machine is twelve or more cases per minute.

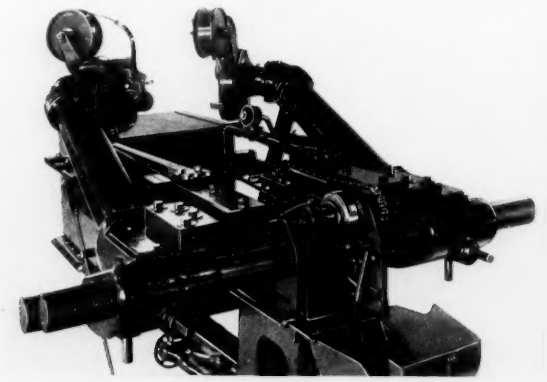

Fig. 36—Bliss Double Head Top Stitcher

The end flaps of Bliss Boxes may also be sealed with adhesives on a Top Automatic Gluer and Sealer, under a recent ruling of the Consolidated Freight Classification Committee. Large users of Bliss Boxes can therefore seal the tops of such cases on fully automatic stitching or gluing machines, no labor whatsoever being required after the contents have been placed in the box. This is of great advantage in plants which use large numbers of cases and wish to employ straight line production methods.

On large cases such as those used for shipping textiles, the top seams may advantageously be sealed with a Bliss Portable Stitcher with "C" anvil (shown in Fig. 24), the advantage being that the case can be stitched without removal from the conveyor line.

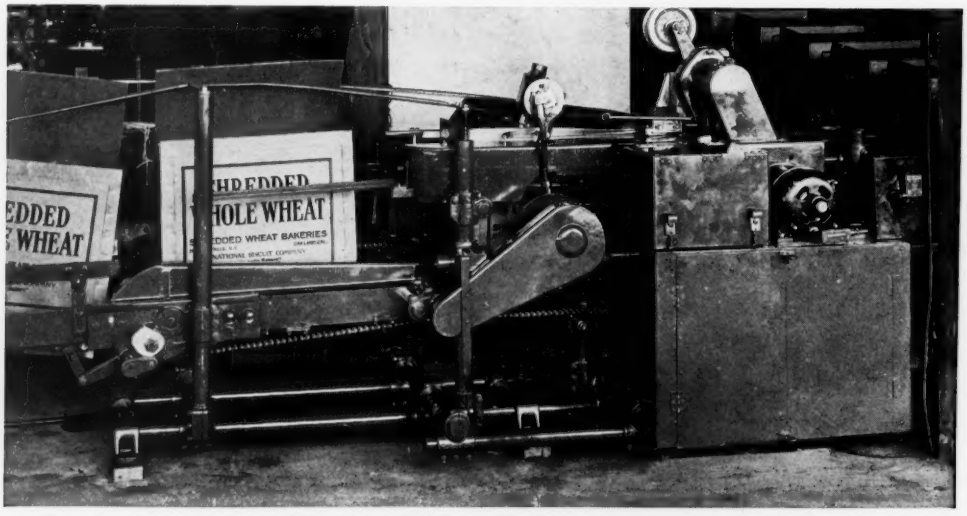

Fig. 35—Bliss Full Automatic Side Seam Stitcher

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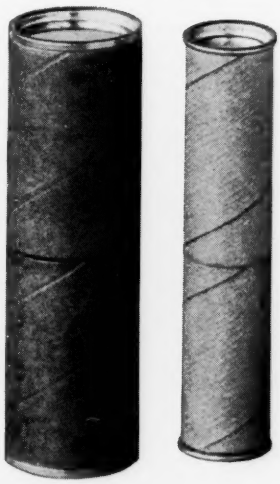

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Sizes of the spiral-wound containers range from ⅛″ to 7½″ inside diameter, while tubes can be supplied in diameters from ⅛″ to 16½″, in any desired length. Parallel wound containers and tubes can be had in diameters from ⅜″ to 7″, in any length, with wall thicknesses from 4/1000″ to ½″ or greater.

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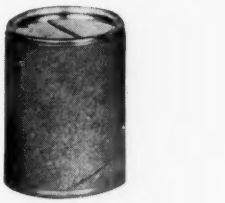

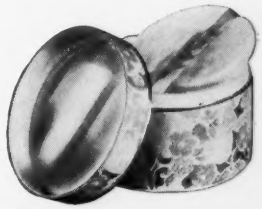

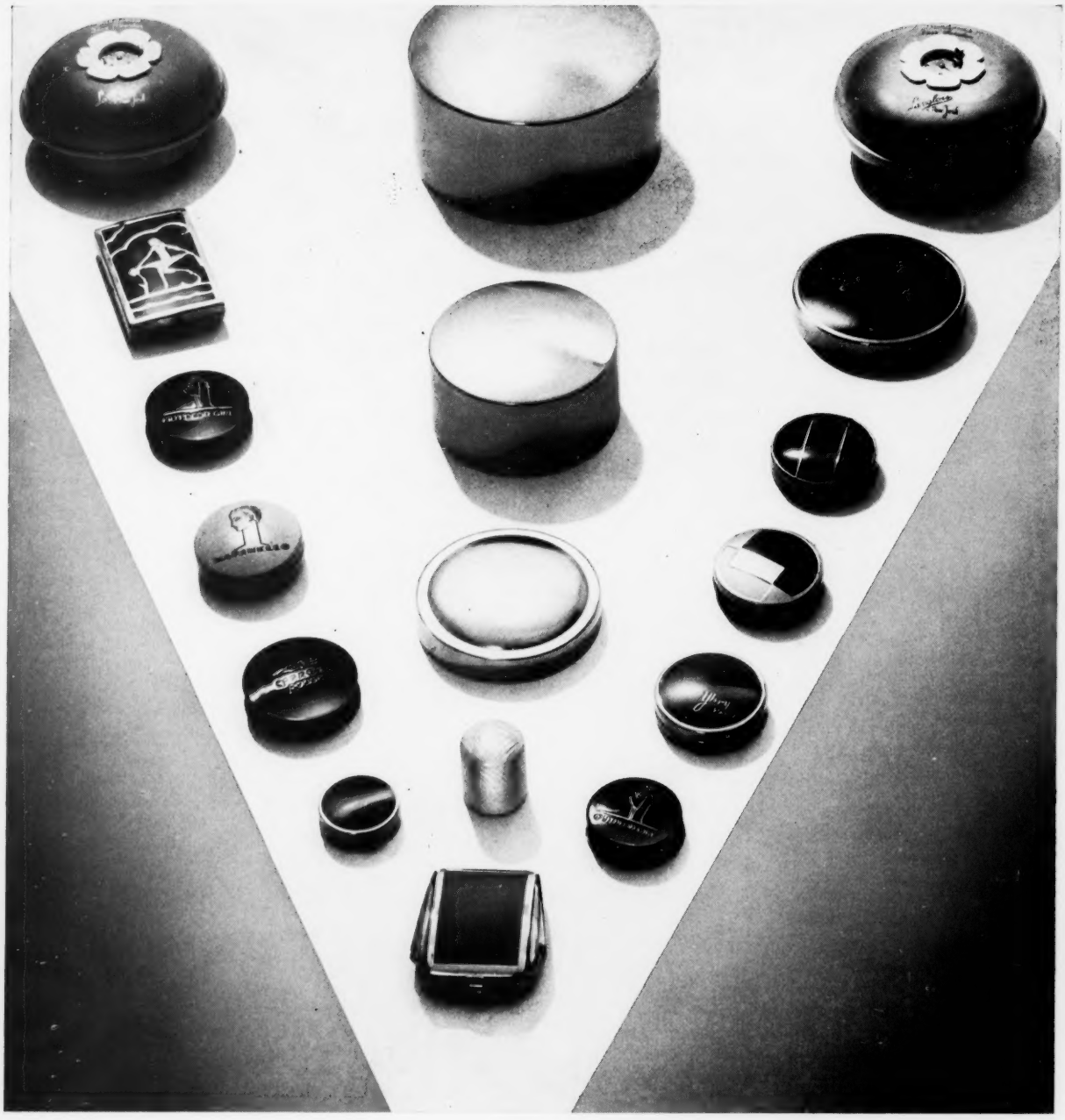

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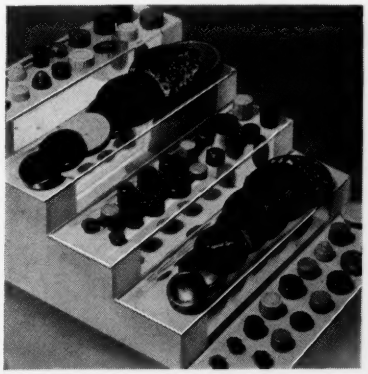

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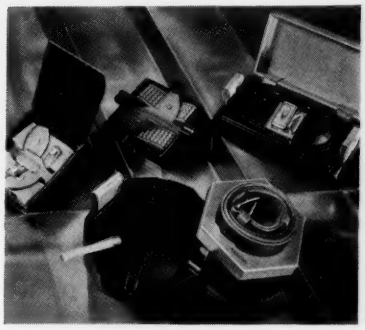

Bakelite Molded Closures for Bottles, Tubes, and Jars

Development of the modern art of packaging demands that a closure serve a double duty. It must thoroughly seal and protect the contents and add to the attractiveness and salability of the product. Because they meet these needs so admirably, it is easily understood why Bakelite Molded closures have been adopted for so many packaged products.

Bakelite Molded closures are noncorrodible, possess unusual lustre and beauty and are readily formed into exclusive designs. The molded threading is clean, accurate and uniform, and the closures are easily tightened and released.

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Bakelite Molded containers are successfully promoting the sale of products of widely different kinds, including cosmetics, candy, safety razors, garters, belts, watches, and dental burs.

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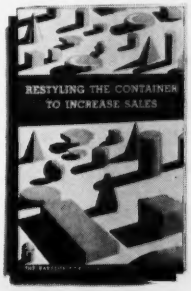

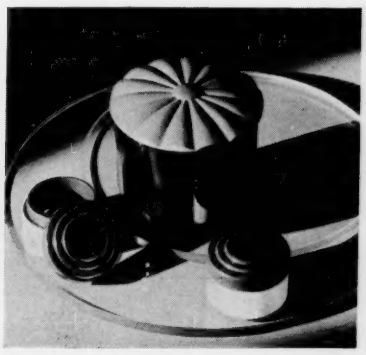

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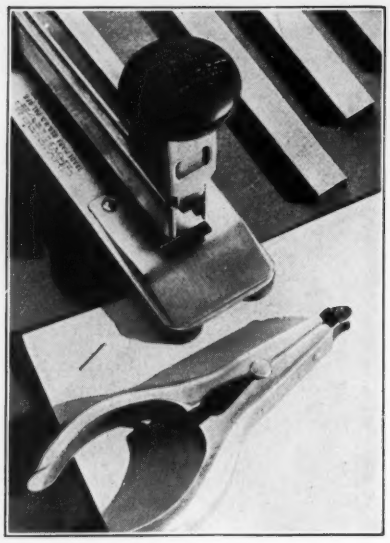

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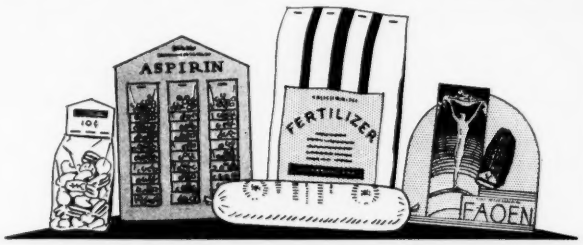
Bostitch methods of fastening will do much of this work accurately and economically . . . just as they function in countless other ways . . . a few of which are pictured here.

Made by the world's largest producer of fastening equipment and devices . . . Bostitch service circles the globe . . . is available in all the leading cities of America and twenty-nine foreign countries . . . and includes without obligation the services of trained Bostitch engineers in determining which of its many products can be used to your advantage.



Innumerable products in bags, envelopes and glassine wrappers are now sealed with a Bostitch staple—or attached to counter display cards.

Bostitch Stitchers reduce labor costs in bottoming or sealing fibre or cardboard cartons and make a sturdier container.

The motor driven stapler leaves both hands free to hold the carton.

Girls handle the work of mounting merchandise on displ cards at high speed—without fatigue.

BOSTITCH · STAPLERS · TACKERS · STITCHERS

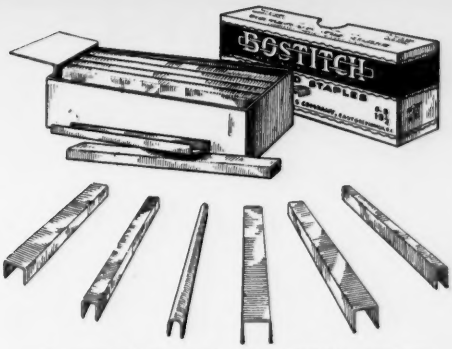
XUM

THE MODERN METHOD OF FASTENING

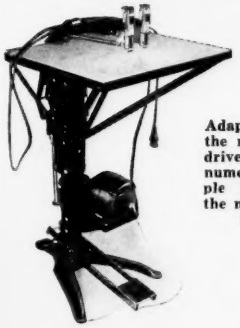
BOSTITCH

BOSTITCH

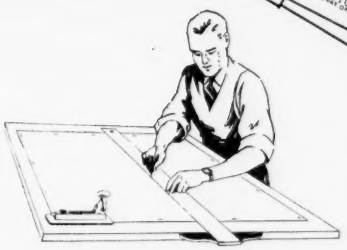
Food products can be speedily and hygienically packaged when Bostitch closes the container.



In many shapes and sizes, Bostitch precision aligned staples insure perfect operation of the machine—secure holding of the material fastened.



Adaptations of the motor or foot driven stapler are numerous. Multiple heads reduce the number of operations.



Draughtsmen unite in praising the Bostitch tacker. The two pointed tack (staple) lies flat, does not obstruct T-square or instrument.

The self-feeding Bostitch hammer drives a two pointed tack (staple) with every blow—an easy one hand operation.

Customers buy with less effort when the product is Bostitch-fastened to a compelling display card.

Quantity production economies are effected by such a battery of heavy duty C-type machines.

BOSTITCH · BOSTITCH · BOSTITCH · BOSTITCH · BOSTITCH ·

BOSTITCH SALES COMPANY, EAST GREENWICH, R. I.

A.R.C. Powder Compacts successfully featured by Woolworth and other leading chains in all the colors of the rainbow.

Products in A·R·C· MOLDED CONTAINERS *Sell* FASTER

Molded containers lend a rich distinction to products . . . lifting them above competition and immediately quickening sales. They are not only beautiful, but exceptionally durable. And by remaining in use as handy receptacles they perpetuate your name and create good will. The American Record Corporation has been supplying high quality, precision molding to leading concerns in varied fields for more than half a century. We mold to your order—and provide you with custom-built packages and closures that individualize whatever you have to sell. Visualize *your* product packaged in a new, made-to-measure molding and you'll see swifter, larger sales. Detailed particulars and samples of our work on request.

MOLDERS OF ALL STANDARD PLASTIC MATERIALS

IN ALL COLORS

●

Uralite · Beetle · Plaskon
Unyte · Phenolic · Arcolite
Bakelite · Durez

AMERICAN RECORD CORP.

SCRANTON, PA. NEW YORK—1776 BROADWAY

XUM

Safety

assured with the

KWICKLASP MAILING BOX

Hundreds of thousands of these boxes are used every year by manufacturers who have subjected them to the most rigid tests before adopting them as their standard mailing boxes. WE HAVE YET TO HEAR OF A SINGLE KWICKLASP BOX failing in service.

This remarkable record is due to the great care exercised in the manufacture of these boxes and the extraordinary strength of the special board used in their construction.

KWICKLASP Boxes save money for users in many ways. They eliminate the need of paper and string and the labor involved in using these materials. They eliminate losses caused by damaged articles; and they help to keep customers because of the excellent condition in which the goods are received.

Price list of standard sizes on request

Tell us the kind of product you wish to mail, and also its size, and we will send you a sample box so that you can test it in any way you wish.

W. H. DEISROTH COMPANY, INC.

Established 1875

713 Spring Garden St. **Philadelphia, Pa.**

Complete

CROWN SCREW CAP

Has the Deep Hook Shaped Thread—an exclusive feature—that insures better sealing, easier application and easier removal.

CROWN LUG CAP

An efficient, dependable closure for many kinds of foods, drug products and toilet preparations.

CROWN MASON CAP

The perfect seal for mason jars. Widely used by food packers and in home canning.

DARLING CLOSURE AND OPENER

A cap that combines splendid sealing qualities with a patented device that gives remarkable convenience in opening.

AXA CROWN

An efficient, hermetic seal for food and many other glass packed products.

NEPRO CROWN

The world's standard cap for carbonated beverages of all kinds. Universally used.

DACRO DISC MILK CAP

The sanitary seal for milk, cream, chocolate milk and other dairy products.

CROWN CORK &

WORLD'S LARGEST MAKERS OF CLOSURES FOR

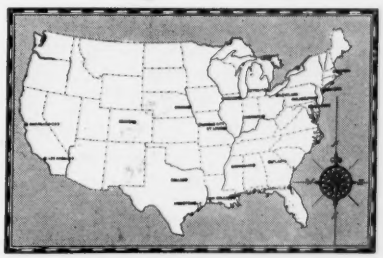
XUM

CLOSURE SERVICE!

THE CLOSURE that crowns your glass packed product is a factor of vital importance in your sales. For upon it depends to a large extent your reputation and good will. You should, therefore, use the best. ◆ C. C. & S. offers you a wide variety of closures for every type of glass packed product —some of them available only here. And back of every C. C. & S. Cap stand years of experience in the manufacture of closures—a complete modern Chemical Laboratory for the solution of sealing problems—an Art Department capable of producing original, attractive and artistic designs—unsurpassed plant facilities with unlimited production and absolute accuracy in manufacture—Branch Warehouses throughout the country for your convenience and service. ◆ When you come to C. C. & S. for closure service, your problems are our problems. All the experience, skill and facilities of this great organization are at your disposal—to assure the right closure for your product—to assure uniform, satisfactory results in the sealing of every container.

NATION WIDE SERVICE

C. C. & S. Service is characterized by a cheerful willingness to cooperate with both customers and prospective customers. There is a C. C. & S. office conveniently near you. Write, wire or phone for the C. C. & S. representative.



ATLANTA, GA.
55 Forsyth St., S. W.

BALTIMORE, MD.
Eastern Ave. & Kresson St.

BOSTON, MASS.
143 Sidney St.
Cambridge

CHICAGO, ILL.
1346-1354 Northbranch St.

CINCINNATI, OHIO
212-214 E. Third St.

DALLAS, TEXAS
917 Marion St.

DETROIT, MICH.
1579 E. Milwaukee Ave.

HOUSTON, TEXAS
1011-13 N. San Jacinto St.

JACKSONVILLE, FLA.
McDuff & Strickland Sts.

KANSAS CITY, MO.
500 Delaware St.

NEW ORLEANS, LA.
518 Howard Ave.

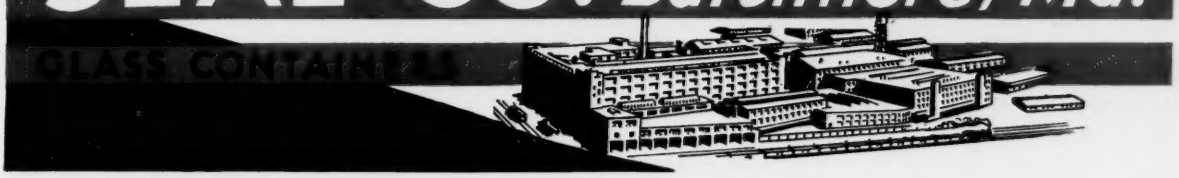
NEW YORK CITY
Bush Terminal No. 3
Brooklyn, N. Y.

ST. LOUIS, MO.
406 N. Third St.

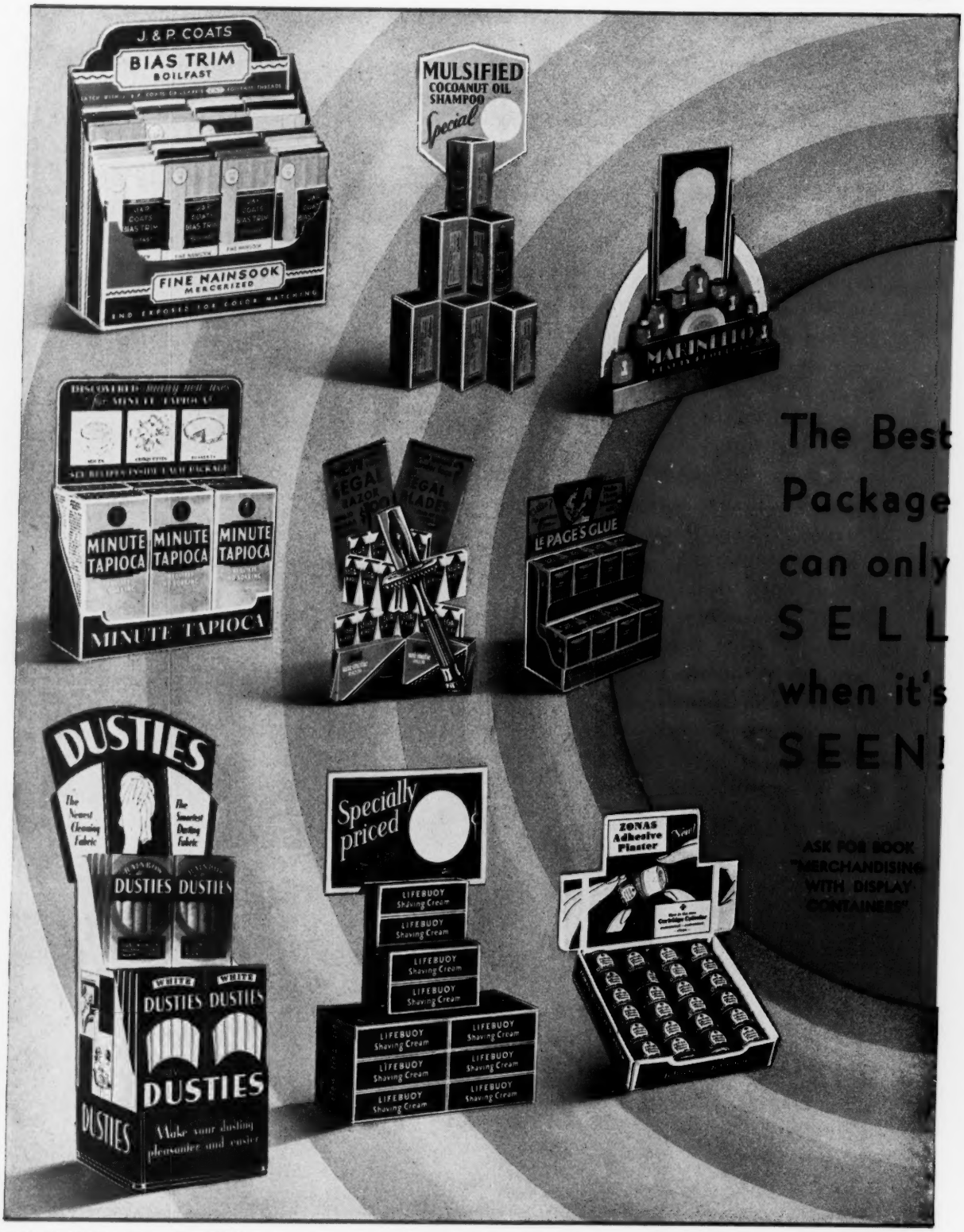
WESTERN STOPPER COMPANY—West Coast Representative
SAN FRANCISCO, CAL.—Potrero Ave. & 25th St. LOS ANGELES, CAL.—1717 Industrial St.

WIRE, WRITE OR PHONE THE OFFICE *Nearest* YOU

SEAL CO. *Baltimore, Md.*



...DISPLAYS That Help



EINSON-FREEMAN CO., INC.

Packages to SELL!

Specializing in window and store display advertising

Here are a few of the patented Einson-Freeman devices that have had remarkable success in securing packages "preferred position."

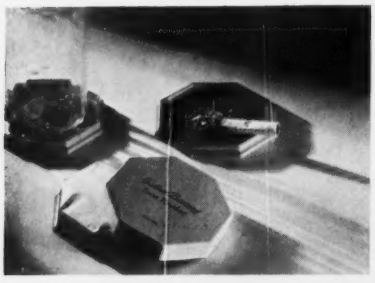
They get in because they "fit in" with modern merchandising methods — and they win dealer preference because they actually SELL! If you want to assure your package preferential treatment in the store—

CONSULT AN EINSON-FREEMAN EXECUTIVE!

LONG ISLAND CITY, N. Y. • NEW ENGLAND OFFICE, PARK SQUARE BLDG., BOSTON, MASS. • WESTERN OFFICE, WRIGLEY BLDG., CHICAGO, ILL.

Durez
Molding Compound

for jars, for trays,



WHAT DUREZ IS:

Durez molding compound is a synthetic phenolic resinoid product, molded under tremendous heat and pressure into the shape of the desired product. The manufacturers, General Plastics, Inc., do not perform the actual molding operations, but supply the raw material in powder form to custom molders and others equipped to make it into the finished product.

DUREZ CLOSURES:

Durez closures, or caps, are strong, tough and hard, yet light in weight. They are not affected by acids, alkalies or other destructive agents, making cork inserts unnecessary. They never rust or corrode or discolor the contents. They will not leak, because the threads are molded, not cut. They screw down tightly, without binding. Extreme accuracy in threading and design is assured, whether you make ten or a million closures.

DUREZ JARS:

Very recently, Durez was able to announce the perfection of a new non-hygroscopic compound which made possible the manufacture of the first molded jars. Waterproof, oil-proof, acid and alkali resisting, these jars are unusually tough. The most modern designs, in a variety of colors, are possible. Special dies are made in your own design, and large runs are most practical. Durez jars are light in weight, saving shipping costs. It is almost impossible to chip or crack them.

DUREZ BOXES:

Molded Durez boxes, especially with an "after-use," have been widely used to stimulate sales. Belt boxes which become cigarette humidors, watch boxes which are also display stands, face powder boxes, razor containers for travel, ensemble boxes, manicure boxes, playing card boxes—boxes for almost every product imaginable. These too, are made in your special design only. They are permanently lustrous, cannot crush, dent or bend out of shape.

DUREZ DISPLAYS:

Molded Durez counter-display stands and ensemble trays are rapidly gaining favor. They have been very successfully used for displaying drug products, perfumes, cosmetics, and manicure sets, and manufacturers of candies, gum and other small packaged goods find them economical and sales-stimulating. On large runs they are particularly practical. They never get shabby or dog-eared, are strong and very

XUM

closures, re-use boxes displays, compacts, etc.

light in weight, can be made in any shape, even the shape of the product, and always look brand new. Names and trade-marks can be molded right into their lustrous surface.

MISCELLANEOUS:

Scores of other packaging items can be made better and more economically with Durez, the Modern Plastic Compound. Durez lipsticks never dent, tarnish, scratch or lose their lustre. Durez paste-rouge containers are light, easy to open, permanently beautiful. Durez compacts are colorful, pleasant to handle, scratch-proof. Whatever your packaging problems, investigate Durez.

SOME FAMOUS DUREZ USERS:

The best testimonial for Durez is the standing of the houses which use it. Squibb, Auto-Strop Razor, Johnson & Johnson, Pinaud, Palmolive, Parke-Davis, Barbasol, Fitch, Astringosol, Zonite. Lambert Pharmacal, Nelson-Baker, Hinds, Lehn & Fink, McKesson-Robbins, Colgate—these are but a few of the many nationally-known users of Durez.

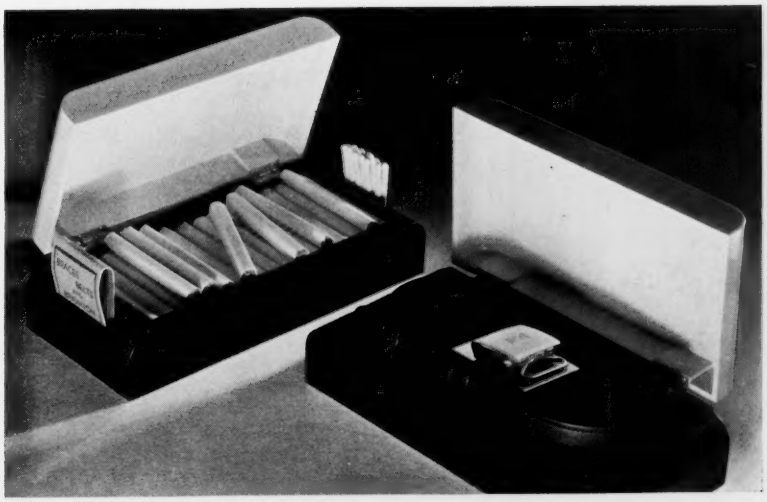
WHAT TO DO:

Whether you are interested in Durez for closures, or for any of the many other applications, we will be glad to lay the facts about its many advantages before you. First, we will send samples of other work similar to yours. Our staff of specialists, trained in thousands of applications, will show how Durez can be especially adapted to your needs. And, we will establish and help maintain relations between your House and the custom molder.

Simply drop a note, stating your problem, to General Plastics, Inc., at the home office in N. Tonawanda, New York, or to any of the other offices listed below.

GENERAL PLASTICS, INCORPORATED
Walck Rd., N. Tonawanda, N. Y.
Also:
NEW YORK: 250 Park Avenue
CHICAGO: 9 S. Clinton St.
LOS ANGELES SAN FRANCISCO

DUREZ
Reg. U. S. Pat. Off.



THE MODERN PLASTIC COMPOUND

FACTORY AT CASTLETON-ON-HUDSON, NEW YORK SALES OFFICES AT NEW YORK BOSTON

COMPLETE DESIGNING FACILITIES PLUS 25 YEARS OF CARTON MAKING EXPERIENCE

MANUFACTURING FACILITIES FROM THE MAKING OF BOARD TO THE COMPLETION OF THE PRINTED CARTON

In the creation and production of artistic, colorful cartons that stand out distinctly on the retail shelf or counter, the Fort Orange organization has for years been an acknowledged leader.

It places at the disposal of purchasers of cartons a most comprehensive service . . . the cooperation and counsel of packaging experts—the services of a skilled staff of experienced package designers . . . and the production facilities of one of the most progressive carton manufacturing plants in the East.

Phone or write our nearest office and a representative will promptly call to discuss your requirements.

FORT ORANGE PAPER CO.

CASTLETON-ON-HUDSON, N. Y.

NEW YORK BOSTON

XUM

MASTER METAL FOIL PRODUCTS

FOR PACKAGE PROTECTION AND EYE-APPEAL

MASTER METAL CARTONS
Composed of foil-surfaced paper-board give your package superior eye appeal.

MASTER METAL LABELS
A bright metal gold or silver label adds distinction and quality to a package.

MASTER METAL FOIL WRAPS
Pliable, bright silver foil gives complete quality protection to many products.

MASTER METAL LITHOFOIL
Supplies [illegible] to your [illegible]

As the flash of sunlight upon a knight's armor would attract and hold the human eye today, so the flaming brilliance of real metal foil will secure the attention of customers for your packaged product. Just as the over-lapping plates of a coat of armor protected its wearer from sword or dagger thrust, foil's real metal surface protects your product from the attacks of moisture, sunlight, and other contaminating odors. Give your packaged product foil's other winning advantages.

REYNOLDS METALS CO.
INCORPORATED
541 West 25TH St. New York, N.Y.

MASTER METAL UNIFOIL

Many attractive colors and patterns are available in addition to the samples shown here. Submit your packaging problem to us for suggestions and samples for your product.

MASTER METAL FOIL

Many different types and weights are available for your selection. Submit a sample of your product to us for suggestions and prices.

MASTER METAL LABELS

Examine the attached label. Observe the brilliant contrast of color and Foil, the sharply defined details, and accurate embossing and debossing. A Metal Label will lend a sparkling quality and brilliance to your package.

[redacted] is an effective medium for package wrappers, labels, and box-tops. When used in the form of a tight wrap, it forms an all-metal shell which seals in moisture and flavor. It can be supplied in various weights, embossed or polished, in sheets or rolls. Color-printing shows to unusual advantage on UNIFOIL. (The other side of this advertisement is printed on MASTER METAL UNIFOIL LS-1110). CARTONS are made from this same material, the advantages of real metal foil being combined with paper board. Master Metal Cartons can be constructed to have the foil on the inside for protective purposes, or on the outside for display value. When on the outside the flashing brightness of real metal foil will give your package a definite display advantage by means of its power to attract and hold the human eye.

[redacted] is manufactured in different styles adapted to the product to be packaged. We supply the right foil for every purpose—aluminum foil, tin foil, or composition foil, some with paper backing and others without. Foil can be plain, embossed, and color-printed, in sheets or rolls. Silver or lacquered. The advantages of product protection and display value are combined in this material.

[redacted] of bright gold or silver metal that attract and hold the eye, will bring a packaged product to the attention of more people. They are the best medium to use in dressing up cartons, boxes, bottles, and many other types of packages.

Full information about our products and their application to your needs may be had by addressing the Package Service Bureau, Dept. PC

REYNOLDS METALS COMPANY

Incorporated

541 West 25th Street, New York, N. Y.

1249 So. Campbell Ave., Chicago 345 Ninth St., San Francisco

XUM

FOR A SINGLE UNIT OR A COMPLETE PACKAGING LINE

This Packaging Line is Stokes & Smith from beginning to end!

It delivers 60 complete packages per minute in the plant of the Royal Baking Powder Company

Two different styles of package are handled by one Stokes & Smith Packaging Line, when Royal Chocolate and Vanilla Pudding is given its final dress and sent to market. The Royal Vanilla Pudding, weighing 2¾ ozs., is packaged in a printed carton. The Chocolate Pudding, weighing 4½ ozs., is tight-wrapped.

Cartons are fed knocked-down. They are automatically formed and bottom sealed. Next a liner bag is automatically plunged into the open cartons. They are then carried under filler hoppers, which automatically fill them to desired weight, without a variation of more than 1/16th oz. Filled, the liner bags are folded and tightly sealed in with the top flaps of the carton. The carton flaps are turned in and the carton tops sealed.

At this point the Vanilla Packages are complete. The Chocolate Packages are carried on conveyors to the S & S Tight-Wrapper, where their labels are glued on and they are tight-wrapped at the surprising rate of 60 cartons per minute.

This particular installation is but one of many designed by S & S Engineers, ably serving an ever growing number of manufacturers who demand the utmost economy, reliability and efficiency from the machines that package their wares.

The Packaging Line

- S & S Carton Feeder and Bottom Sealer
- S & S Bag Inserter
- S & S Automatic Fillers
- S & S Special Top Sealer and Bag Folder
- S & S Tight-Wrapper

STOKES & SMITH Co
PACKAGING MACHINERY
...VING MACHINERY ...Pa.

STOKES & SMITH Co

PACKAGING MACHINERY — PAPER BOX MACHINERY

FRANKFORD, PHILADELPHIA

London Office
23 GOSWELL ROAD
LONDON, ENGLAND

Australia & New Zealand
F. T. WIMBLE & CO., Ltd.
SYDNEY, AUSTRALIA

Pacific Coast
MAILLER SEARLES, Inc.
SAN FRANCISCO, CAL.

MATERIAL: Powders, granular products, pastes 1

CAPACITY: ½ oz. to 5 lbs.—any container

PRODUCTION: 15 to 30 per minute

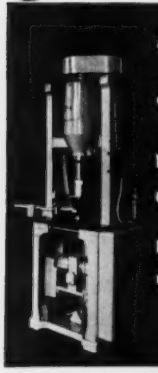
OPERATORS: One

Filling by gross weight, volumetric measurement or packing.

Write for literature on

S&S UNIVERSAL FILLER

IF YOUR PA
PROBLEM IS



MATERIAL: Powders, granular products, pastes 2

CAPACITY: ½ oz. to 15 lbs.—any container

PRODUCTION: 10 to 20 per minute

OPERATORS: One

Filling by gross weight, volumetric measurement or packing.

Write for literature on

S&S HEAVY DUTY FILLER

MATERIAL: Powders, granular products 3

CAPACITY: 1 oz. to 5 lbs.—cans, boxes, canisters

PRODUCTION: 20 to 60 per minute

OPERATORS: One

Filling by gross weight, volumetric measurement or combination of both.

Write for literature on

S&S SINGLE OR DOUBLE UNIT FILLER (AUTOMATIC)

MATERIAL: Salted and shelled nuts, tea, whole spices, flaked cereals 4

CAPACITY: 1 oz. to 1 lb.—bags, cans, boxes, etc.

PRODUCTION: 20 to 30 per minute

OPERATORS: One

Filling by volumetric measurement.

Write for literature on

S&S SIMPLIFIED VOLUMETRIC FILLER

STOKES & SMITH
FRANKFORD PHILADELPHIA

XUM

UR PACKAGING
LEA IS . . .

5 **MATERIAL:** Nuts in shells, hard candies, flaked products

CAPACITY: 4 oz. to 7½ lbs. 220 cubic inches

PRODUCTION: 15 to 25 per minute

OPERATORS: One

Filling by net weight.

Write for literature on

S&S CONVEYOR NET WEIGHT SCALE

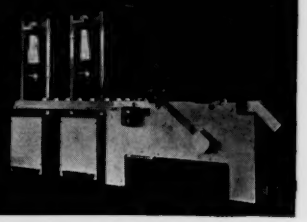
6 **MATERIAL:** Powders, cereals, seeds, chemicals, etc.

CAPACITY: Envelopes 2" to 8" high, when closed

PRODUCTION: 60 to 120 per minute

OPERATORS: None. Entirely automatic. Connects with and seals filled envelopes from powder filler or net weight scale

Write for literature on



S&S BAG AND ENVELOPE SEALER

7 **MATERIAL:** All food and grocery products in cartons

CAPACITY: Maximum carton: 10½" x 6½" x 4½"
Minimum carton: 2¾" x 1⅝" x 3¼"

PRODUCTION: 40 to 75 per minute

OPERATORS: One

Several Models. Feeds cartons, bottom seals, fills, top seals.

Write for literature on

S&S NEVERSTOP CARTON FILLER & SEALER

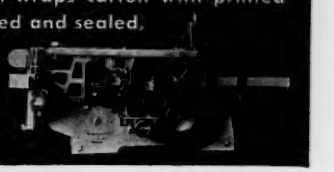
8 **MATERIAL:** All food and grocery products

CAPACITY: Maximum carton: 10" x 6½" x 4"
Minimum carton: 3¾" x 1½" x 1"

PRODUCTION: 60 to 70 per minute

OPERATORS: One

Automatically tight-wraps carton with printed label, after it is filled and sealed, making attractive, siftless tight-wrapped package for all products.



S&S AUTOMATIC TIGHT WRAPPER

ITH TOKES S&S SMITH Co
HILADELP FRANKFORD PHILADELPHIA

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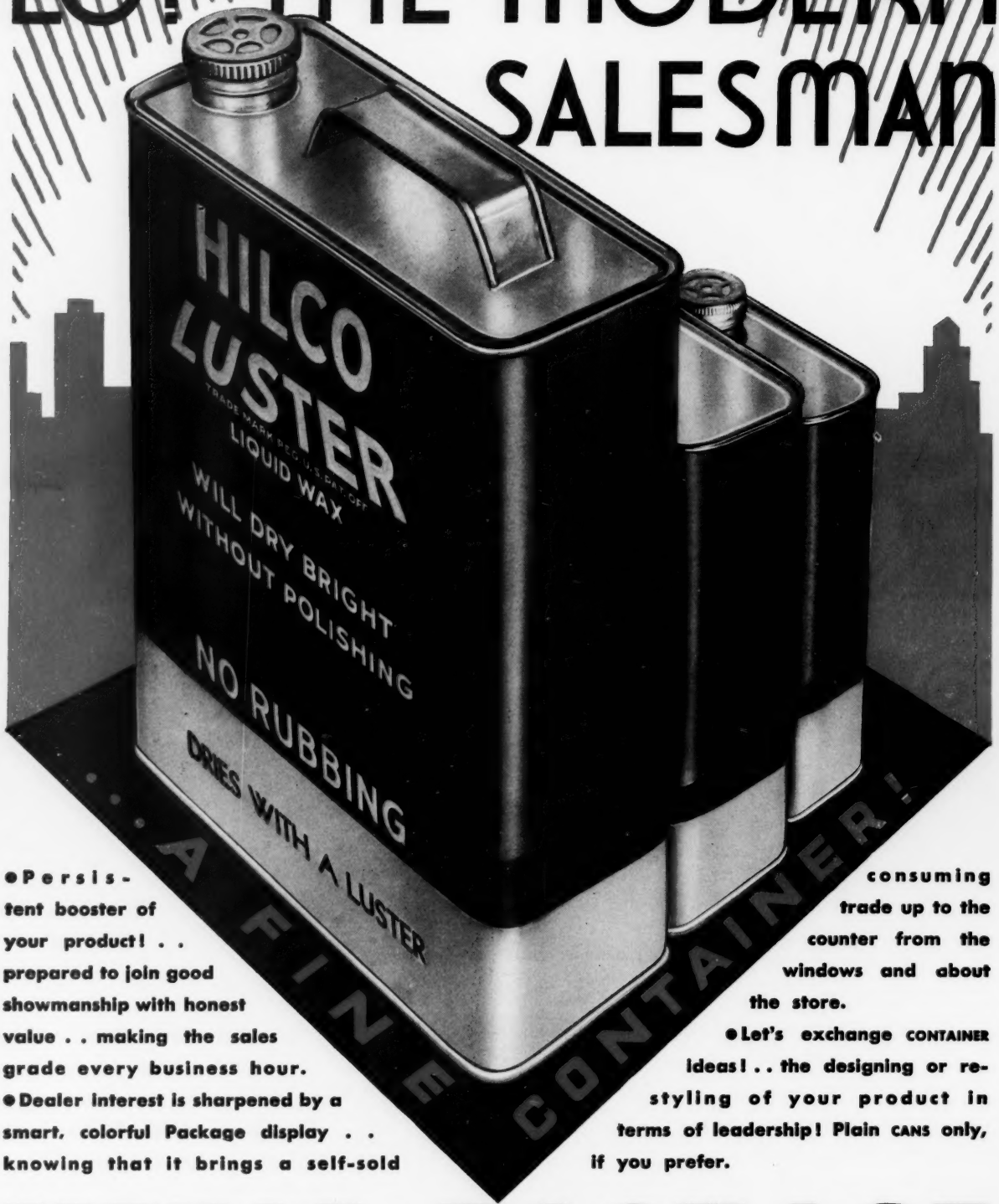
LO! THE MODERN SALESMAN



● Persistent booster of your product! . . prepared to join good showmanship with honest value . . making the sales grade every business hour.

● Dealer interest is sharpened by a smart, colorful Package display . . knowing that it brings a self-sold consuming trade up to the counter from the windows and about the store.

● Let's exchange CONTAINER ideas! . . the designing or restyling of your product in terms of leadership! Plain CANS only, if you prefer.

METAL PACKAGE CORPORATION

110 E. 42ND ST., NEW YORK CITY

ESTABLISHED 1909

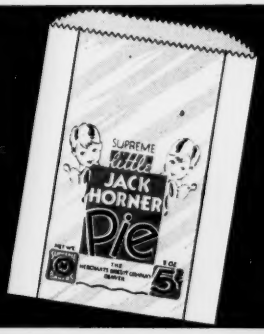
SALES OFFICES AND PLANTS • NEW YORK CITY • BALTIMORE • BROOKLYN • CHICAGO
THE FISCHER CAN COMPANY DIVISION • HAMILTON • OHIO

XUM

A PLAIN, flat glassine bag combining eye appeal and economy, with the emphasis on economy. A beautiful printing job. Made for the Quality Biscuit Company.

WHEN the product has no inherent beauty in itself, an attractive bag in Lizard Embossed Glassine will increase counter sales. Made for General Baking Company.

THIS Clearface capitalizes eye appeal, with true economy, using moisture proof cellophane for the window and *laminated* moisture proof glassine for the back. Equipped with Tin Tie Closure. Made for First National Stores.



ANOTHER Clearface bag—flat style—made with a plain cellophane window and plain glassine back. An attractive printing job that lets the pie talk for itself—as only a good looking pie can talk. Made for the Merchants Biscuit Company.

WHAT can you save by putting your product in a paper bag—how can effective bag designs increase the displayability, eye appeal, and saleability of your product?

Come to headquarters with your problem. For the past 33 years, Continental has pioneered in development of displayability in paper bags.

Unhampered by any limitation in paper stock, with all the facilities of the most modern specialty bag plant, and backed by the resources of the world's largest paper organization, we offer you experience, abilities unmatched and unrivaled. A card from you will start a train of action. Send it today.

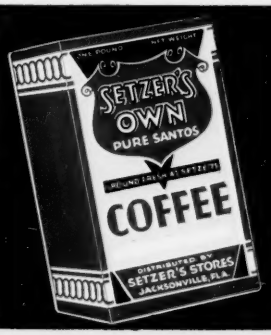
CONTINENTAL PAPER & BAG CORP.

A Division of International Paper Company

220 EAST 42nd STREET - - NEW YORK

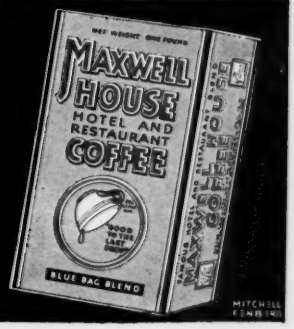
WHAT rye bread fanatic could resist the appeal of a crusty rye bread in this attractive Clearface bag of plain cellophane and white paraffine body. Made for First National Stores.

HERE is the Old Faithful—our Bon Ton Bread Bag. Known the country over. Made of sulphite paper, allows gases to escape, and the crust to harden and also prevents molding. Made for Cushman Bakery.



WHAT macaroon addict could resist this beautiful all cellophane bag full of their weakness? None—not one, and Bohack does a wonderful macaroon business.

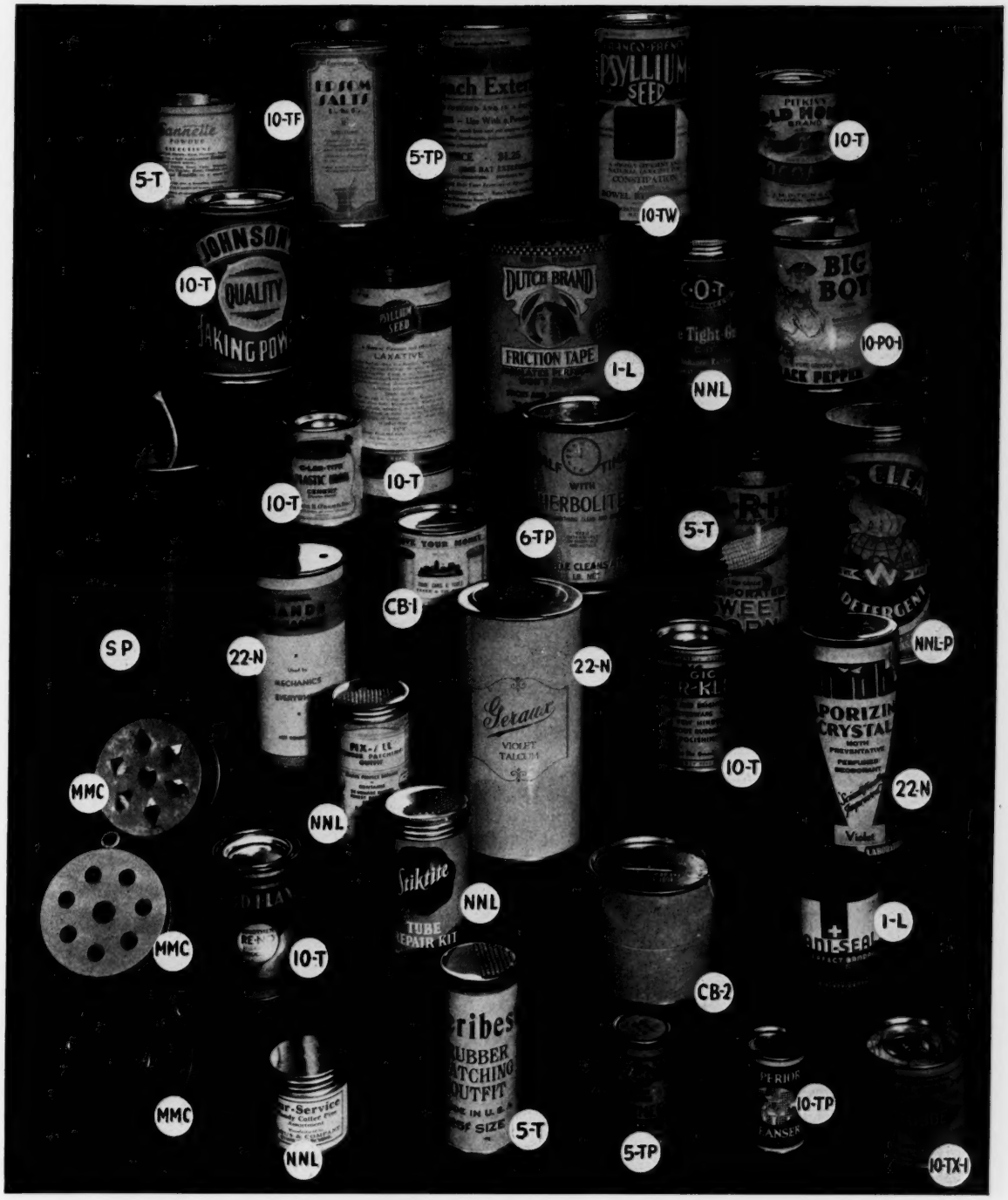
HERE is a maximum display with minimum cost. A flat style bag made of extra transparent glassine.



EYE appeal display no other container can surpass at a price no other method can touch. Our all over printed Duplex Coffee Bag, glassine lined. Here are two typical jobs, one in three colors, the other in four colors.

XUM

CIN-MADE CONTAINERS



Here are a few typical CIN-MADE cylindrical containers and as you will note they are used for packaging all kinds of dry products. The complete line includes a diversity of canisters—either paper or metal ends—paper cores, mailing cases and tubes.

CIN-MADE'S Complete Packaging Service includes the creation, printing and application of your labels—and, if desired, the packaging of your containers in reshippers. May we furnish you with samples and prices? Of course, there is no obligation.

THE CIN-MADE CORPORATION (formerly THE CINCINNATI MAILING DEVICE COMPANY)

295 EGGLESTON AVENUE « « « Representatives in Principal Cities » » » CINCINNATI, OHIO

XUM

Chambon Corporation

911-917 New York Ave., UNION CITY, N. J.

CHAMBON AUTOMATIC PRINTING MACHINES:

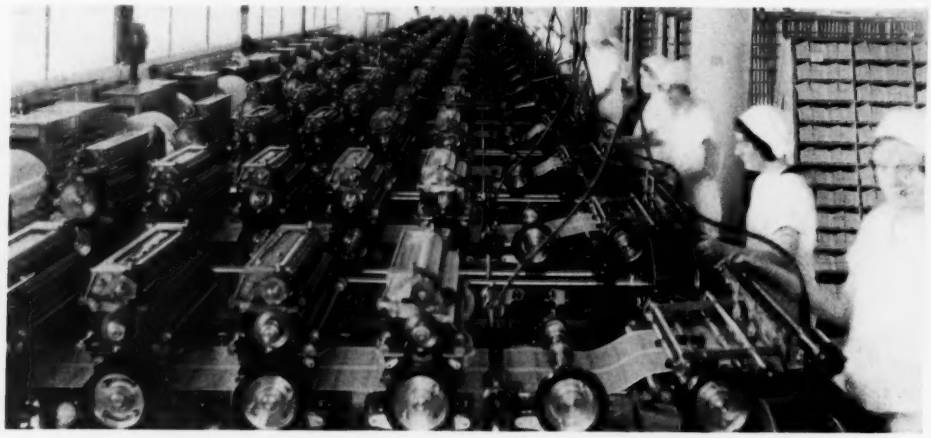
These printing machines are designed to fit into the manufacturer's production line and to turn out, automatically and continuously, the same printed job a million or a hundred million times without variation in size, color, register, or cost. An operator keeps the machine supplied with paper and ink and removes the finished work. Considerable economies are effected in production.

Paper is furnished in rolls and travels through the machine in a straight line. Printing operations are performed successively by cylindrical, chrome-plated, bronze plates good for as many as 100,000,000 impressions. All mechanical motions are rotary to avoid vibration and noise.

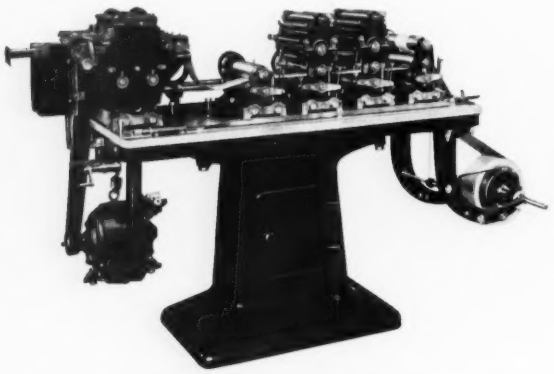
Specially designed ink fountains supply the ink. Any number of colors may be used. Both sides of the paper can be printed at the same time. Register is perfect. The quality of the work is predetermined and built into the machine, eliminating the usual element of personal skill.

Chambon Automatic Printing Machines can be adapted for letterpress printing, dry offset, or rotogravure. Combinations of these can be effected. The same machine can be used for scoring, creasing, embossing, perforating, slitting and rewinding, sheeting, dieing out to shape, and other supplementary operations.

Chambon Printing Machines may be operated 85 to 95 per cent of the working day. Compact in size, they require but a fraction of the space required for ordinary equipment. While designed primarily for a particular job they possess a flexibility feature which permits changing over to other jobs at slight expense. Further details will be furnished gladly on request.



Chambon printing machines manufacturing multi-color gum labels in plant of Beechnut Packing Company, Canajoharie, N. Y.



Chambon two-color machine used for printing, scoring, and dieing out labels and cartons

APPLICATIONS:

For printing cartons, wrappers, labels, bags, seals, coupons, tickets, stamps, envelopes, and printed forms of all kinds in large quantities. Chambon machines will print on any kind of paper from thin tissue up to 60-point board, including glassine and transparent cellulose.

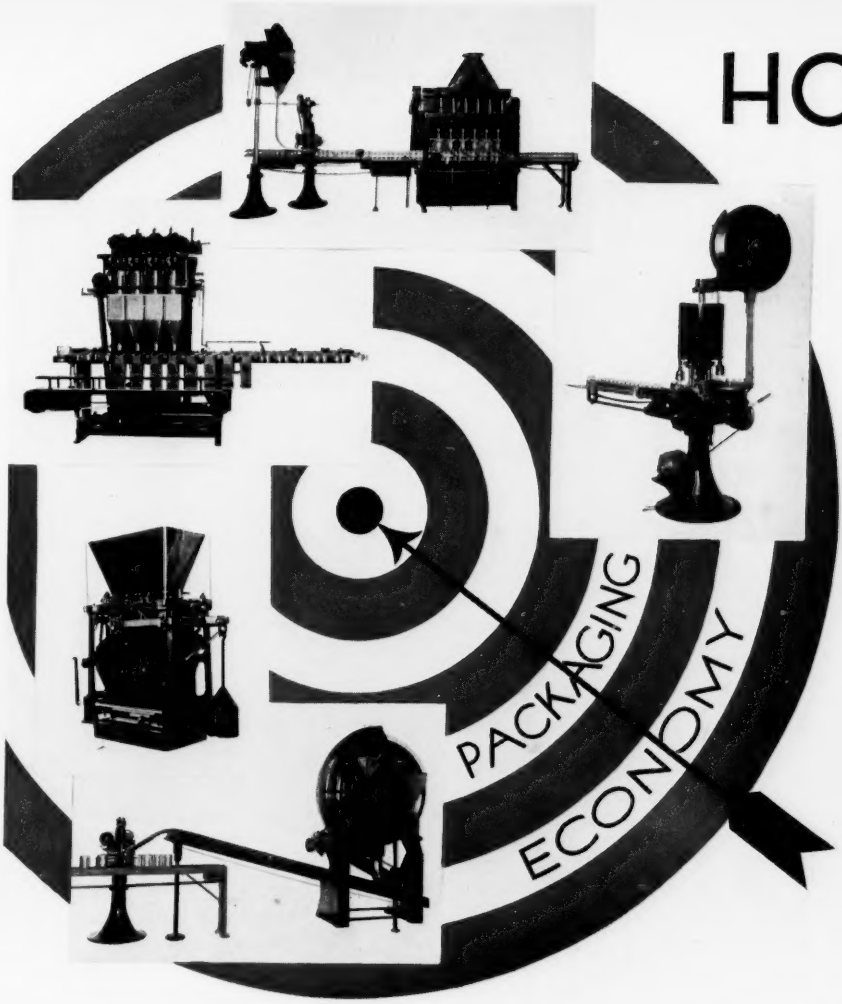
METHODS OF REPRODUCTION:

Letterpress, dry offset, and rotogravure, and varnishing.

FABRICATION:

Chambon machines can be adapted for scoring, creasing, embossing, perforating, slitting and rewinding, sheeting, dieing out to shape, etc.

FURTHER DETAILS ON REQUEST



HOEPNER
and
CAPEM

AUTOMATIC PACKAGING MACHINERY

REDUCES PRODUCTION COSTS AND

AIMS DIRECTLY TOWARD

... successful merchandising

Modern methods and improved equipment continue to penetrate new fields of profit. A generation of American industry has indicated its confidence in this organization and the two outstanding lines of packaging machinery which it sponsors. The name HOEPNER stands unchallenged where automatic weighing, filling and bagging of dry products is involved. The trade-mark CAPEM enjoys world wide prestige. It identifies equipment primarily designed for the automatic sorting, feeding and applying of practically all types of caps and closures. Three decades of effort in the direction of these and related packaging problems provide the background of experience which is available to you without obligation.

CONSOLIDATED PACKAGING MACHINERY CORP.

HOEPNER AUTOMATIC MACH. CO., DIVISION

1400 West Ave.
Buffalo, N.Y.

CAPEM MACHINERY CORP. DIVISION

ESTABLISHED 1836

COLT'S PATENT FIRE ARMS MANUFACTURING CO.

MANUFACTURERS OF

FIRE ARMS - ELECTRICAL EQUIPMENT - MOULDED PLASTICS PRODUCTS - DISH AND METAL CLEANING MACHINES

HARTFORD, CONNECTICUT, U. S. A.

Jan. 1, 1933

PLASTICS DIVISION

• • •

CUSTOM MOULDING DEPARTMENT

Moulders in
Coltrock
Coltrock Supremé
Vulcabeston
201 Stock
Durez
Bakelite
Beetle
and
Other
Special
Compounds

• • •

BUTTON DEPARTMENT

Moulded
Buttons
For the
Sweater
Garment
and
General
Clothing
Trade

• • •

MECHANICAL GOODS DEPARTMENT

Manufacturers
of
Vulcabeston
Sheet
Packing
Moulded
Packings
Gaskets
Insulation
Sheet
Brake Lining

B & C says.

Tho you may be blessed with the beauty of a perfect body it is the cloak of Character and Reputation that prevails - influences and lives on.

Water always finds its own level; Merchandise and ability are no exceptions.

We have faith in our Country, Our People and our products and in the ever existent Markets for our standard of "Quality and Service"

The one yardstick of "Profitable Economy" is "Quality and Service."

It is to those who would know and appreciate the science of "Profitable Economy" in the possibilities and varied applications of the "Plastics Art" that we say,

"Good Will is born of Quality, Service, Character and Reputation; Beyond the influence of "The Drifters," in your line and ours line we will Cooperate and "Live On".

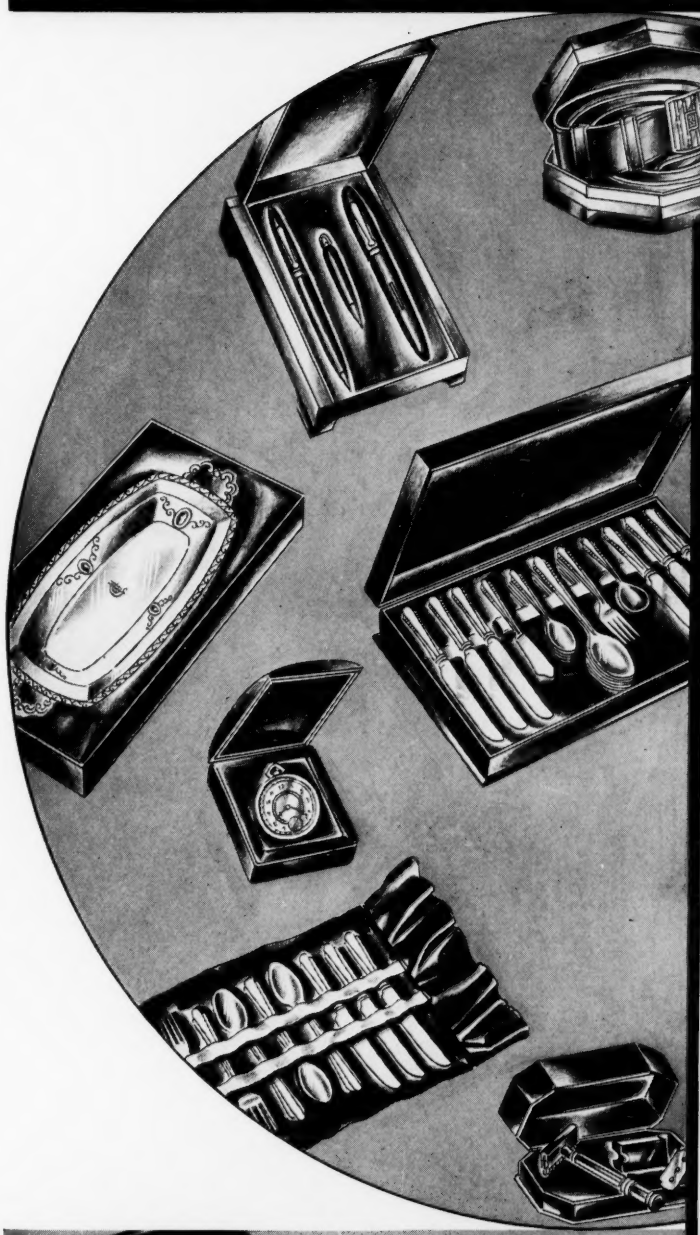
Sincerely
B. F. Conner

SPECIALISTS IN MOULDED CLOSURES FOR TIN, GLASS AND OTHER CONTAINERS

(B. F. CONNER)

XUM

Tarnish Preventive Packaging!



NO MORE DISCOLORING

of Silverware or Silvered Products in the stockroom, on the shelf, in the retail show case or in the home!

CROMPTON Silver Saver

VELVETEENS *and* DUVETYNS

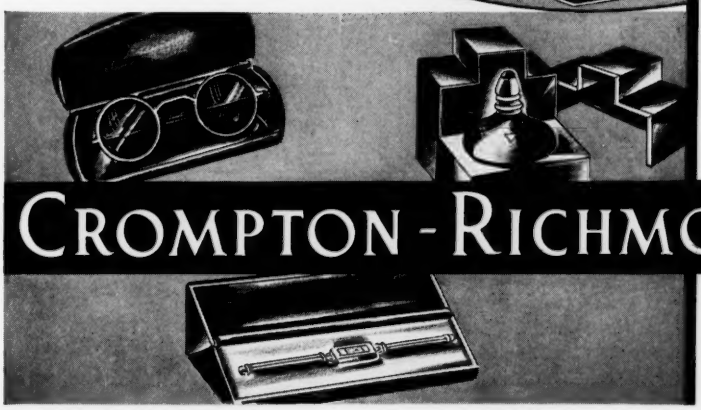
for Rolls, Bags, Cases, Boxes, Linings and Coverings. These fabrics are not only ANTI-TARNISH but also actually PREVENT TARNISH.

● For years Crompton Velveteen and Duvetyn Package Linings and Coverings have been Anti-Tarnish, but, up to the present time, Anti-Tarnish has only meant the careful selection of chemicals and dye-stuffs which did not contain any ingredients to cause discoloration of silverware.

● Now, however, through the cooperation and research of America's foremost silversmiths, Crompton has produced a Tarnish Preventive Finish: — "Crompton Silver-Saver". Fabrics with this finish have been specially impregnated with a chemical compound that draws the tarnishing sulphur fumes from the air and does not permit them to reach the silverware.

● And, for the first time, beautiful colours, may be had in these high quality Velveteens and Duvetyns.

● *Specify Crompton Silver-Saver Fabrics when ordering your chests, boxes, cases, trays and rolls. If your manufacturer or package maker cannot supply you, write us and we shall be glad to give you the names of those who can.*



CROMPTON-RICHMOND CO. INC.

1071 SIXTH AVENUE at 41st STREET
NEW YORK, N. Y.

Samples, Quotations or Representative upon request.

XUM

Burdick Cans Bring Your Products to the Buyer's Attention

SOME of the most widely known products in the country owe their success in a large measure to the appeal of Burdick cans. At a moment when the consumer's eye wanders over a mass of competitive products, it is the Burdick can, with its clear lithography and attractive design, that decides the sale.

It is not only the advantage of Burdick Cans that you buy for your product when you use this modern method of merchandising, but the personalized service of the entire Burdick organization in following your job, from the origination of the design to the completion of the can. This service, which has meant so much to other manufacturers in the Metropolitan and Eastern Area, is yours without cost. Consult us now for a new light on the merchandising possibilities of your own product.

BURDICK & SON, Inc.
Albany New York

XUM

See DENNISON first

Merchandising Ideas • Styling • Designing • Packaging • Display

SAVE time and trouble. Just bring your problem to Dennison. Our packaging and display experts know how to pick the selling point, lift your merchandise above competition, catch the buyer's eye, stimulate sales. They will create distinctive designs for tags, seals, labels — boxes, displays — printed Cellophane wrappings — package inserts. They will do it quickly, deftly, intelligently, with an experienced understanding of what sells goods. Want proof? Send the coupon.

Let Dennison Service help you

DENNISON MFG. CO., DEPT. P. C., Framingham, Mass.

Please tell us how Dennison Service can help us.
We are interested in the items checked below.

____*Tags* ____*Seals* ____*Labels* ____*Displays*
____*Printed Cellophane* ____*Boxes* ____*Package Inserts*

Name _____

Firm _____

Address _____

City _____ State _____

ECONOMIC MACHINERY COMPANY

Manufacturers of WORLD LABELERS

WORCESTER, MASS.

Chicago: Napoleon Savaria, 410 Monadnock Bldg. New York: 15 Park Row Montreal: Golden Gate Mfg. Co., Ltd.

PRODUCTS

Machines for Applying Paper Labels and Foils on Bottles, Jars, Tumblers, Cans and certain styles of Paper Boxes and Cartons.

Economic Machinery Company has been engaged exclusively in the manufacture of labeling machines for more than thirty years.

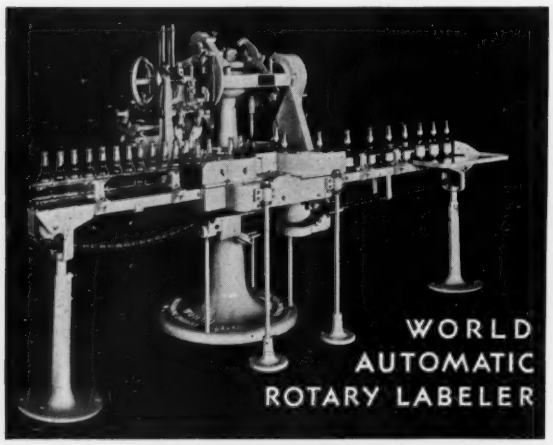
Superior mechanical construction combined with the best of materials and skilled workmanship makes World Labelers the most satisfactory and durable machines obtainable. Thousands of satisfied customers heartily endorse Economic service.

The company manufactures a complete line of hand-fed and automatic machines to meet all labeling requirements successfully and economically.

Every World Labeler is guaranteed to give satisfaction.

Write for advice regarding your labels, and send *labeled samples* of your bottles or packages showing the way you want them *labeled on the machine.* Detailed information and quotation will be sent to you promptly.

Let World Labelers solve your labeling problems.



The WORLD AUTOMATIC ROTARY LABELER is the most successful rotary automatic labeler ever produced. It is designed to efficiently give the large production required in breweries and large beverage and food product plants.

The labelers are constructed either right-hand or left-hand. Where high speed equipment is installed our double unit will give any speed required and produce most satisfactory results

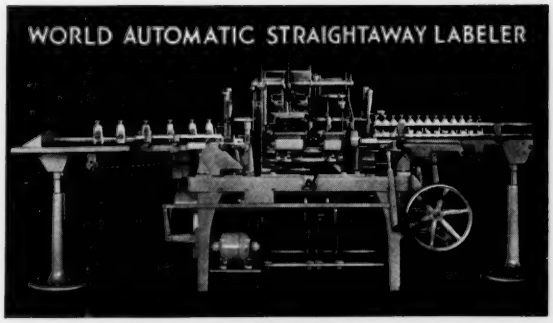
The labelers can be equipped with attachments for applying body labels only or body and neck labels on various sizes of bottles and jars. We can also furnish labelers for applying body and neck labels and foil, in one operation, on quart beverage bottles and other sizes.

Due to its simplified construction, all parts are readily accessible. The cost of maintenance is very low. It is a most practical and economical labeler for labeling bottles and jars, and reduces labeling costs to a minimum.

The conveyor can be designed as desired and connected with other automatic equipment.

The WORLD AUTOMATIC STRAIGHTAWAY LABELER is fully automatic and is a custom built labeler. Each labeler is specially designed to meet the customer's requirements, depending upon the type of bottle and label, and production required.

The single labeler is designed for applying front labels only, and the double labeler for applying front and back labels in one operation. The labelers can also be furnished to apply all-around labels or body and neck labels. This labeler is particularly designed for labeling flat, round, oval, or panel bottles and

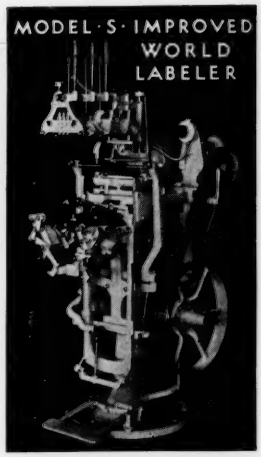


jars, and other packages. Various sizes of bottles can be labeled on the same labeler.

The bottles are labeled in an upright position, automatically timed and centered so that each label is correctly placed, thus insuring uniform and smooth labeling.

The labeler is equipped with feed and discharge conveyor and can be connected to other automatic units.

The labeler is heavily constructed and has proven most successful in many of the large production plants throughout the country.

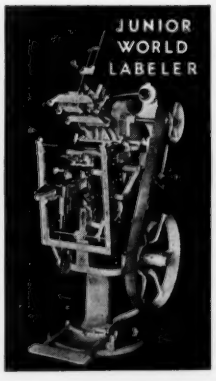


MODEL S IMPROVED WORLD LABELER is the latest type of the IMPROVED World Labeler, and has many exclusive mechanical features and improvements, developed by manufacturing experience of many years. It can be equipped with labeling attachments to label any size bottle, from small vials to gallon jugs.

The IMPROVED World Labeler is very generally used for applying body and neck labels and foil in one operation on quarts and other sizes of beverage bottles.

This labeler is also furnished with attachments for placing labels all around the bottles, or it can be fitted with special center gumming mechanism for applying labels on flat, oval, or panel bottles and flasks, or other packages.

It is ruggedly constructed, quiet and simple in operation, and will label your packages efficiently and economically year after year. It is the most flexible labeler on the market.



The JUNIOR WORLD LABELER is the smaller type of hand-fed semi-automatic, belt- or motor-driven labeler. It is designed for applying body labels only on bottles, jars, or other containers. It is simple in operation and will materially reduce labeling costs as compared with hand labeling.

Portable truck can be supplied at a small extra cost.

Ungummed labels should always be used in the labelers.

All our labelers are equipped with Zerk High Pressure Lubricating System.

XUM

In the Mode
PLAIN
EMBOSSED
GLAZED
NATURE
MICA
LEATHER
METAL
FOIL
FLINT
FANCY
PAPERS
DENNISON MFG. CO.

XUM

XUM

ASK · DOBECKMUN

Pioneer in the manufacture of Cellophane Bags . . . the largest producer devoted exclusively to the fabrication of Cellophane . . . Dobeckmun offers you its unmatched experience in the development of a package of this new type . . . tailor made . . . plain or printed, using only the highest quality of oil inks . . . in flat, square or satchel-bottom style. Dobeckmun uses only genuine Du Pont Cellophane.

Dobeckmun was first to print roll Cellophane . . . first to overcome the many problems of inks, printing and handling. The new Doplex Laminated Fabrics, colorful and novel, are strictly a Dobeckmun development.

We will gladly give you full information about the Dobeckmun products in which you are interested.

THE DOBECKMUN COMPANY · CLEVELAND, OHIO

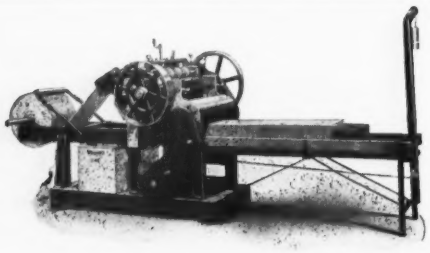
DOBECKMUN

Cellophane Bags

XUM

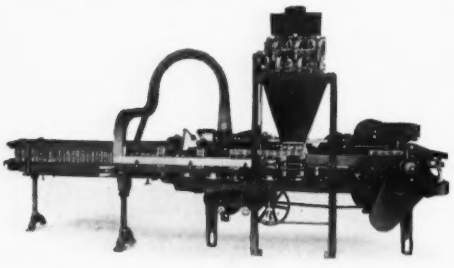
PACKOMATIC
PACKAGING MACHINERY
J. L. FERGUSON COMPANY, JOLIET, ILLINOIS

Branch Offices: NEW YORK CLEVELAND SAN FRANCISCO



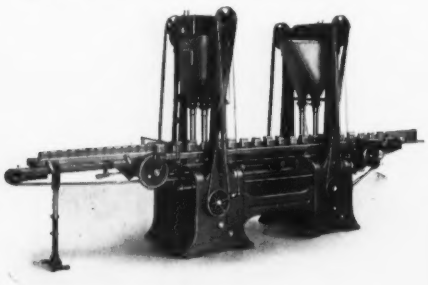
PACKOMATIC CARTON FORMING MACHINE

A shell making machine with speed up to 200 per minute. Easily operated. Chipboard is fed from roll, cut, scored, folded and glued. Requires one operator.



PACKOMATIC CARTON SEALER WITH AUTOMATIC NET WEIGHER.

For sealing bottom flaps of cartons, weighing and filling into three cartons simultaneously, and sealing top flaps. Commercially accurate weights guaranteed at speed up to 60 per min. One operator required.



PACKOMATIC (BOND) GROSS WEIGHER

This fully automatic weigher with auger type feeders fills powdered materials into cartons or cans. The containers are bulk filled at first two stations and check weighed at the second stations. Speed 60 per minute.

Automatic Machines for all Packaging Purposes

Whether you pack in cartons or cans, there is a Packomatic machine that will enable you to produce better packages at lower cost. Some of the machines we make are as follows:

Carton Forming machines
Carton Sealing machines
Automatic Net weight scales
Automatic Gross weight scales
Automatic Volumetric fillers
Automatic Lining machines
Wax Wrapping machines
Automatic Cartoning machines
Semi-automatic Net weighers
Semi-automatic Gross weighers
Container Sealing machines
Can Labeling machines
Coupon Inserting machines
Special machines and devices

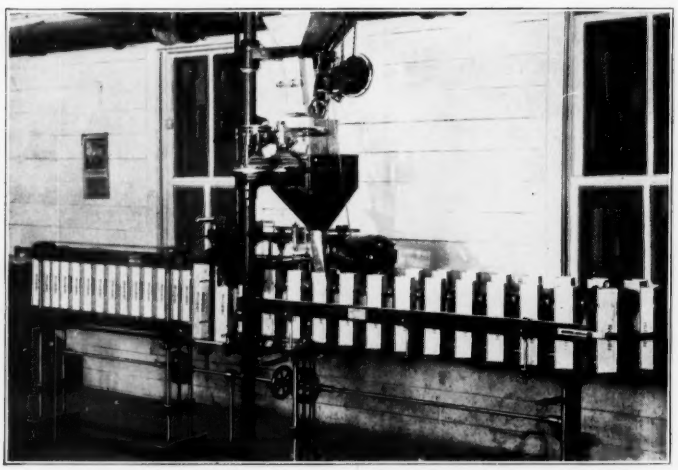
Packomatic machines are known from coast to coast for their reliable, efficient performance.

Some Well-Known Users of Packomatic Machines

The Quaker Oats Company
Canada Dry Ginger Ale, Inc.
Lavoris Chemical Company
The Ohio Salt Company
Thomas J. Webb Company
The Procter & Gamble Co.
Anheuser-Busch, Inc.
Fisher Brothers Company
Carnation Company
Postum Company, Inc.
Cream of Wheat Corporation
The Pepsodent Company
National Biscuit Company
Diamond Crystal Salt Co.
The Great A. & P. Tea Co.
Standard Brands, Inc.

New In Principle and Design—

The Packomatic Carton Sealing and Weighing machine illustrated below was designed specially for rapid adjustability. It handles cartons of a wide range in dimensions and also a large variety of products without convertible parts. Can be furnished with or without the weigher. One operator required. Speed up to 30 per minute.



XUM

FOR 3=DIMENSIONAL DISPLAYS AND CUT OUTS — *use* FALPACO KRAFT-IN-MIDDLE

LIFT HERE AND FOLD ON SCORES TO MAKE SHELF

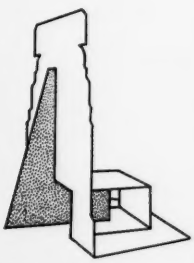


Diagram showing how easel supports shelf in Carter display

The tough Kraft middle between two layers of FALPACO cardboard is a patented, exclusive feature of this new FALPACO CARDBOARD. It has many unusual advantages for point-of-sale displays which center around the package or article. When the package supplies the support, no easel is necessary.

FALPACO KRAFT-IN-MIDDLE can be cut-scored to fold in ANY direction. It is supplied in White or Standard Fast-to-Light Colors, Coated one or both sides, or Machine Finished in white only. Furnished in 5, 6, 8 and 10-ply thicknesses. Stock sizes, 22x28 and 28x44. Special sizes furnished consistent with trade customs.

Ask your paper merchant, or write the mill for sample sheets and test for yourself its many advantages for your next display.

FALULAH PAPER COMPANY

New York Office: Woolworth Building, New York City **FITCHBURG, MASS.**

XUM

INCREASED SALES

PACKAGES	800% Sales Increase . .	Cleaner
	250% Sales Increase . .	Shampoo
	1500% Sales Increase . .	Ink
	100% Sales Increase . .	Carbon Paper
	100% Sales Increase . .	Typewriter Ribbons
PRODUCTS	200% Sales Increase . .	Scale
	20% Sales Increase . .	Teakettle
	70% Sales Increase . .	Percolator
	80% Sales Increase . .	Water Pitcher
	65% Sales Increase . .	Barometer
	47% Increase gross sales average 3 years	Hearing Aid
	5000% Increase *net profits*	

These are recently published cases of the results of well designed *packages* and *products.*

Industrial Design is a new business service which has grown up in the last five years. What do you know about it? How can you use it? What does it cost?

We are engaged in this new business. Come in or write. We will be glad to talk over the use of design in your market. We work either on a job basis or on a retainer fee. In either case we estimate the design work to be done and submit an itemized proposal for the manufacturer's consideration...*no obligation whatever.*

We started this business during the depression. Our charges are fitted to the 1933 situation.

INDUSTRIAL DESIGN · INC

Simon de Vaulchier, Pres. · Roy Sheldon, Vice-Pres. · George W. Blow, Sec. and Treas.

11 WEST 42ND STREET, NEW YORK CITY · LACKAWANNA 4-6232

PACKAGES: Chamberlain Lotion, Oyloff Shampoo, Palmolive Beads, O'Cedar Wax Cream, Veldown HANDIES, Quink (carton), House of Lords Tea, Colgate's "Seventeen" line, Zip Depilatory. **PRODUCTS:** watches, table glass, electrical egg cooker, kitchen cabinet, steam humidifier, gas stove, children's books, etc., etc. **CLIENT REFERENCES:** Colgate-Palmolive-Peet Co.; International Paper & Power Co.; O'Cedar Corporation; Standard Gas Equipment Company; General Plastics Inc.; Max Factor & Co.; Hall & Ruckel Inc.; Drackett Chemical Co.; Taylor Trunk Company; Richardson Taylor-Globe Corporation; Lock Haven Chair Corporation

XUM

Simplicity

marks the
modern label

by
FOXON

How dependable is your label supply?

• Unless all signs fail, demand for your products will be on the increase in 1933. This will mean an increasing strain on the buyer of supplies, especially as low level prices now necessitate the utmost economy in buying.

• To buy hesitantly from hand to mouth means waste effort, long prices and delayed deliveries. To overstock means the tying up of working capital. To strike the happy medium CO-OPERATION is needed, as never before, between buyer and supplier.

• Appreciation of the buyer's point of view has always been the foundation stone of FOXON SERVICE. Not only beautiful printing, not only advanced styling and new materials, but all these things supplied in the best form for *your* convenience, in practical units, on short notice, at reasonable prices, not just once or twice but month after month and year after year, — this is an acid test for service.

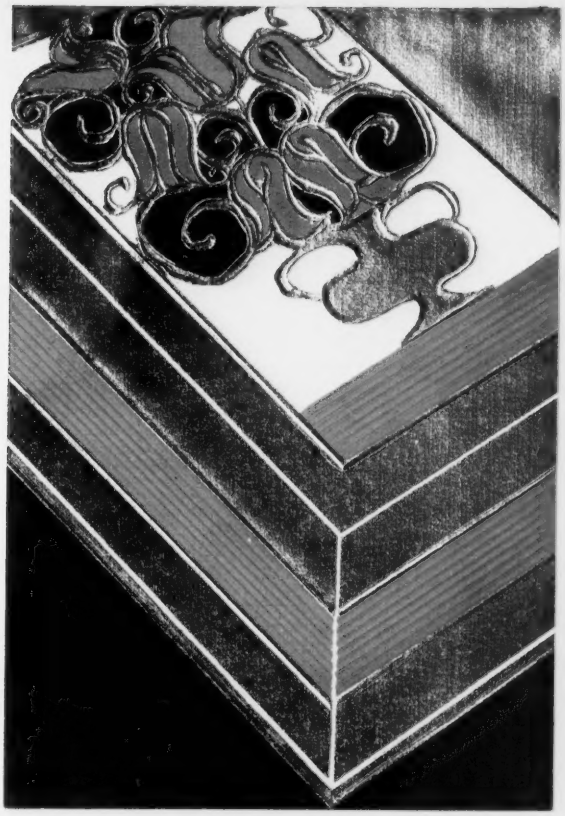
• Judged by these standards, how reliable is your source of supply? How reliable is it likely to be during the forthcoming months when so much will depend on whose goods are first on the counter?

• To be sure of DEPENDABILITY one can't start too soon with Foxon service.

THE FOXON COMPANY

227 West Park Street **Providence, R. I.**

XUM



Make Your Package *distinctive* with

DIAMOND ROLL LEAF

The embossed effects obtainable thru the use of Transfer Roll Leaf are becoming increasingly popular for package decoration. They give an appealing "atmosphere" to packages that is extremely valuable in gaining attention and stimulating sales.

Diamond Roll Leaf, which is extensively used for this purpose, comes in imitation gold and aluminum and eighteen true and nine pastel colors. Special colors can be made to order when required for large jobs.

Original and unusual effects can be obtained at very moderate cost by this process. Let us make suggestions for an effective use of Diamond Roll Leaf in your present design or in any new design you contemplate using.

Write for samples and full information. A sample roll of any color will gladly be sent for testing purposes.

THE DIAMOND DECORATIVE LEAF CO.

Established 1910, *at Staten Island, New York*

Selling Agents

HASTINGS & COMPANY, *Estab.* 1820
817-19-21 Filbert Street, Philadelphia

W. H. KEMP COMPANY, *Estab.* 1849
350 Hudson Street, New York

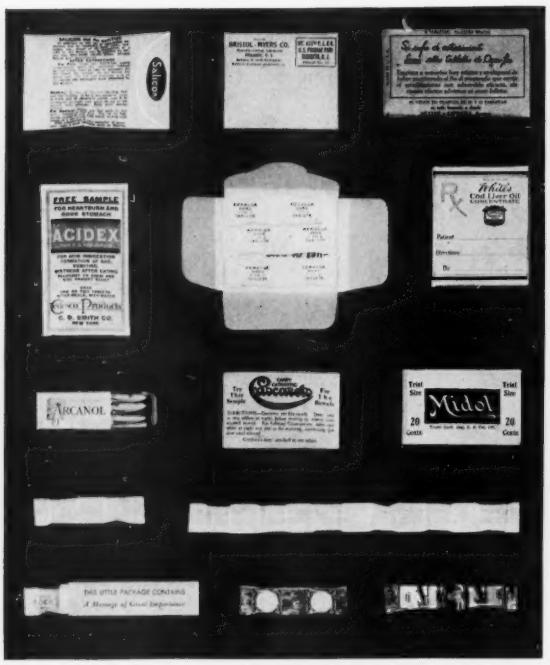
Canadian Agents: BROWN BROTHERS, Limited, Simcoe, Pearl and Adelaide Streets, Toronto 2

Also Stocked by 43 Bookbinding Supply Houses

XUM

SANITAPE

Transparent or Opaque for Medicinal Tablets, Lozenges, Candy or Food



SANITAPE Sample Packages

SANITAPE Standard Packages

Each year an increasing number of manufacturers adopt the Sanitape method of packaging and sealing-in their product for sampling campaigns as well as for standard packages, BECAUSE they have found it to be a thoroughly practical, sanitary and highly economical method.

Sanitape is made of either moisture-proof cellulose or wax paper. The sealing is done by heat, without the use of adhesives.

This method of packaging appeals to the consumer because each tablet is completely sealed and protected until it is used, thus assuring the freshness, purity and hygienic condition of the product. A strip of Sanitape carrying a sufficient number of tablets for use during the day may be detached from the supply and carried in the purse or pocket.

A booklet describing the advantages of both the opaque and transparent Sanitape will be sent on request.

Ivers-Lee Company

215 Central Avenue, Newark, New Jersey

XUM

UNIVERSAL

Tablet Filling Machinery

for

Bottles, Tins, Slide Boxes or Cartons

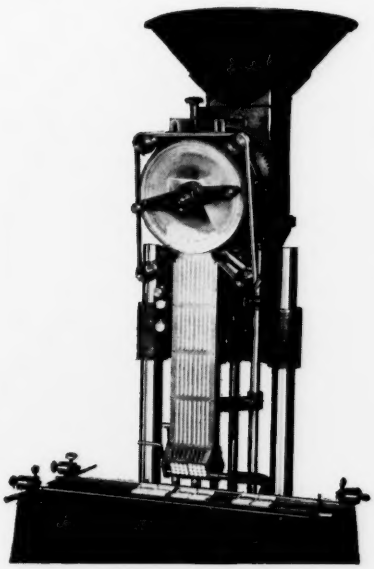


Fig. 1

The Ivers-Lee Universal Tablet Counting and Packaging machines will handle with equal facility coated or uncoated tablets. Various shapes such as oval, round or bean shaped products offer no hindrance to the perfect operation of these machines.

Fig. 2

In Fig. 1, we show a machine equipped with vacuum feed for the filling of Aspirin tablets in dozen packets. The range of this machine depends entirely on your rate of production. Feeding attachments can be supplied to handle 3, 6, 12, 24 or 30 tablets in one operation and places them directly in the container—so closely that it is impossible to duplicate Ivers-Lee filling precision by hand methods.

The speed of this machine is directly variable to either number of packages per minute, or tablets per package. The machine demonstrated is handling two packages of 12's in each operation and has a speed of 80 to 100 packages per minute.

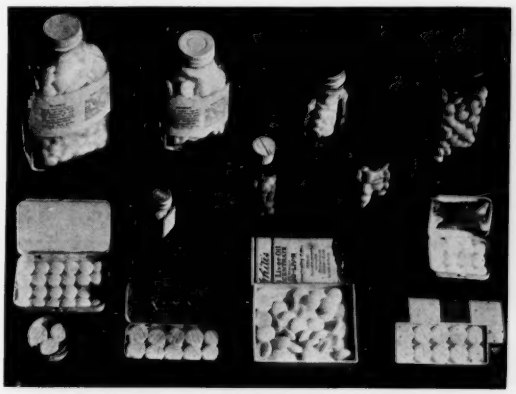


Fig. 2 shows the same Universal Tablet Counting and Packaging machine equipped with gravity feeding mechanism and designed for use where bulk filling is required into bottles, boxes, vials, or bags. This machine will also count and fill sealed capsules.

The speed of filling varies with the number of tablets per package.

At 100 tablets per package, the speed is 50 filled units per minute. As the number of tablets per package is decreased, the speed increases up to 130 units per minute.

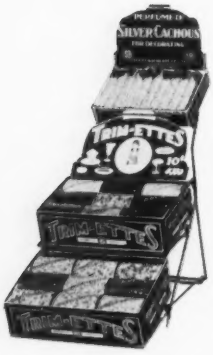
This machine will line up with your high-speed labelers, cappers and cartoners, working up to 100-130 packages per minute.

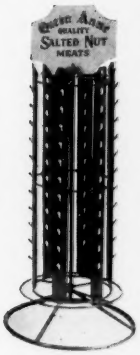
Ivers-Lee Company

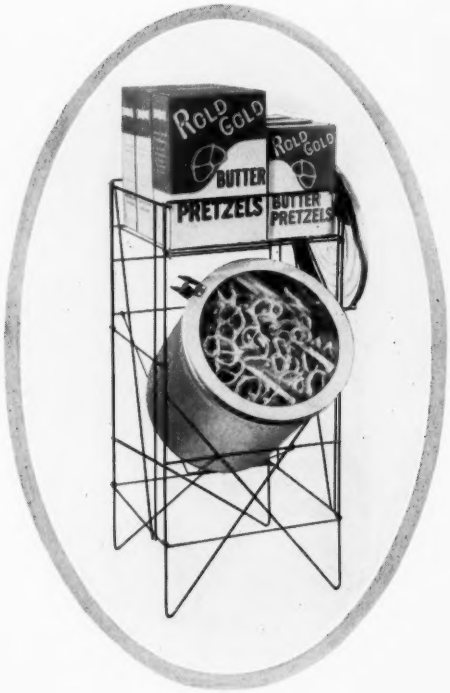
215 Central Avenue, Newark, New Jersey

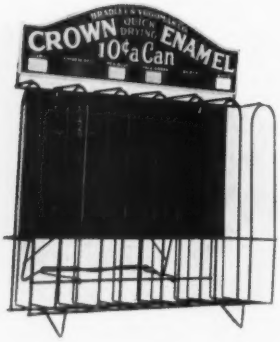
XUM

DISPLAY and SELL









You can find nothing better than a wire rack or fixture that has been designed and built especially for you by

THE KERR WIRE PRODUCTS CO.

The illustrations above show some of the work we have done for nationally known manufacturers.

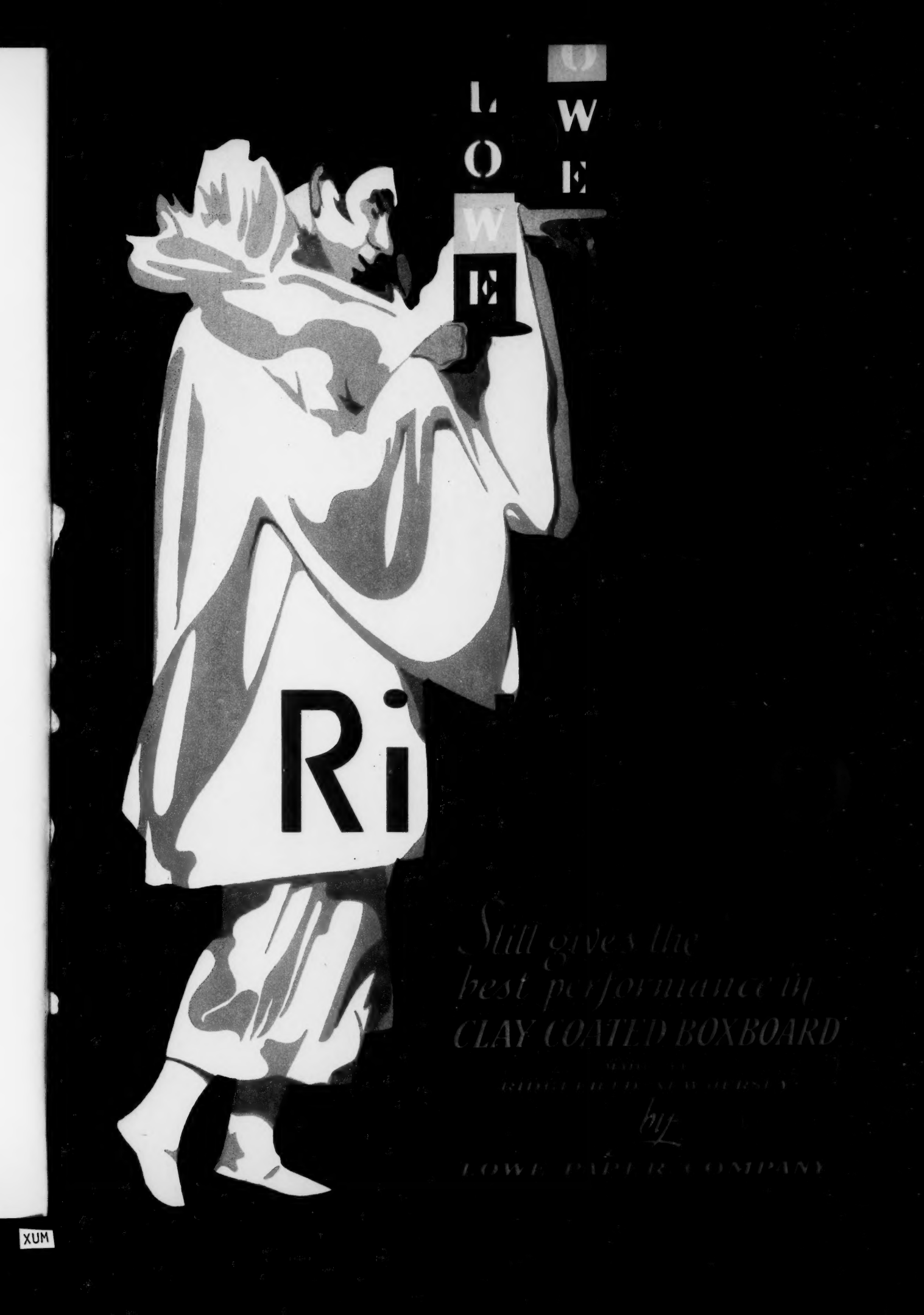
Why not send samples of your merchandise and let us make an original display, built for your product.

THE KERR WIRE PRODUCTS CO.

319 NORTH WHIPPLE STREET

CHICAGO - ILLINOIS

XUM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Ri
Still gives the
best performance in
CLAY COATED BOXBOARD
by
LOWE PAPER COMPANY

When you are fighting for a
place on the marketing stage---

And depending on packaging
to win and hold your audience---

You will score a hit most frequently
if your cartons and display containers are

Made of

Ridgelo
CLAY COATED

Folding Boxboard

●

This insert is RIDGELO Clay Coated Folding Boxboard
White Two Sides---.016---Lithographed Both Sides

Made at
Ridgefield, New Jersey
by
LOWE PAPER COMPANY

Canadian Representative: W. P. BENNETT & SON, Toronto

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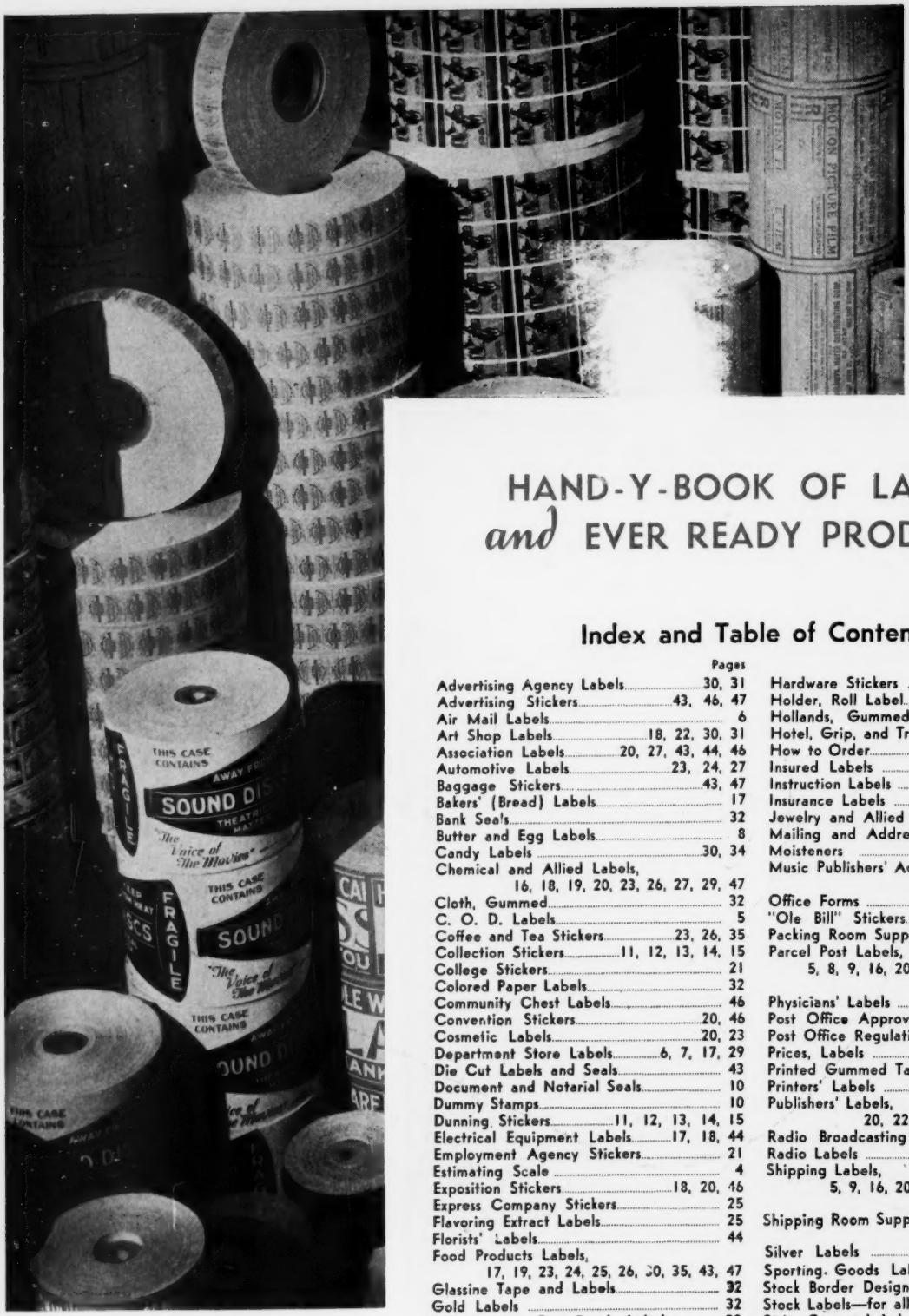

HAND-Y-BOOK OF LABELS *and* EVER READY PRODUCTS

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We have, in this index, tried to cover the type of label most intimate to your own business. Consider every other label as an idea that, with changes, may suggest some profitable application to your own needs.

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Ever ready Label Corporation

257-265 WEST 17th STREET ››››NEW YORK, N.Y.

"For the Man"
"Who Seeks",
"New Ideas".

The "HAND-Y-BOOK OF LABELS" is your book. Painstaking care and effort have made it a source of ideas that will be valuable to you in your business.

It really doesn't make much difference whether you are using labels now or not --- the "HAND-Y-BOOK" will show you how you may use labels to replace many less effective and less economical methods of handling daily routine.

Right now, for example, take the "HAND-Y-BOOK", just skim over it at first, and we'll venture to say that you will immediately strike some new thought that can profitably be applied in your business!

Prices, colors, sizes --- all have their place in the "HAND-Y-BOOK", so that you can get the story "at one shot". Use the order blank when you order, and also when you want additional information. (If you're not ordering now, be sure to keep your copy of the "HAND-Y-BOOK" on file.)

Ever ready yours,

EVER READY LABEL CORP.

This letterhead was printed in one operation on Ever Ready's Automatic Production Presses. The sample gummed paper, is the quality you are to expect on your labels. Test it for writing surface and adhesiveness. These are the important things that count.

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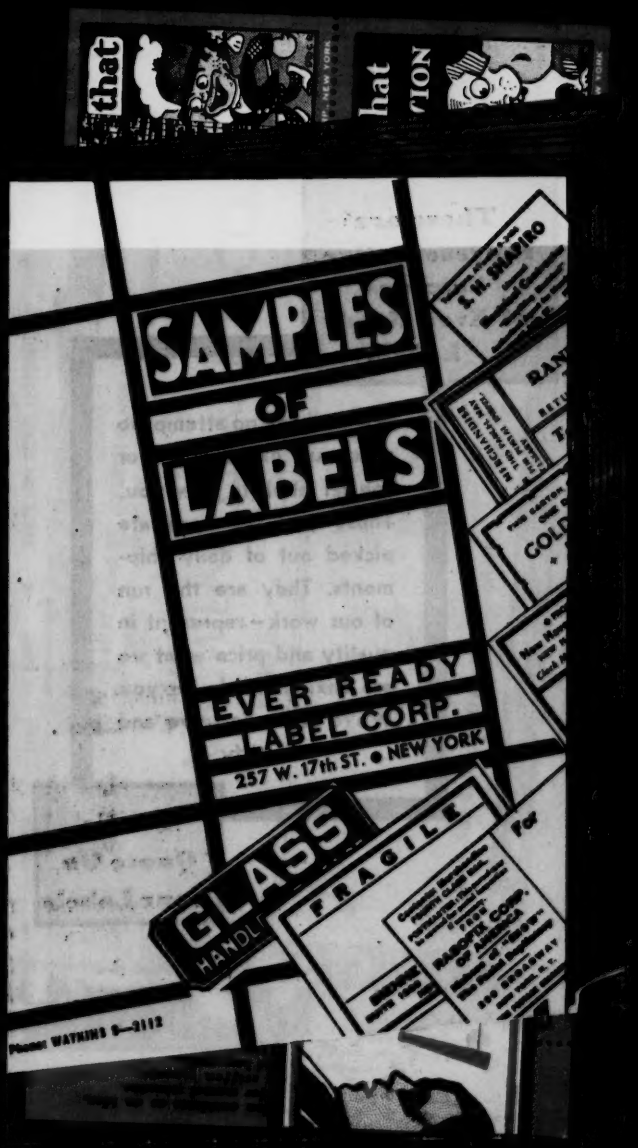
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LABELS
EVER READY
ABEL CORP.
257 W. 17th ST. • NEW YORK
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Phone: WATKINS 9—3112

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HAND-Y-BOOK OF LABELS

This HAND-Y-BOOK asks your courteous consideration on the basis of the service it may render.

Possession of this book tells you most all we have learned about labels through sixteen years of experience—an alert servant to tell you what you wish to know about Ever Ready Labels in rolls, perforated or not, flat (cut singly)—plain or embossed—gummed or ungummed—square or die cut.

This thought we do want to impress. While we specialize in printing and manufacturing of the usual run of labels, we have organized the largest and finest facilities, both mental and mechanical for production of any label problems. We recommend roll labels, yet we make them flat if you prefer. It will be well worth while to examine this HAND-Y-BOOK carefully and thoroughly. Be sure to keep it handy for future reference in your file, PLEASE.

IMPORTANT

Ever Ready is equipped to handle all types of SPECIAL odd manufacturing problems that require printing of rolls, regardless of the paper used—a type of work that very few printers are equipped to handle. If you need such work done in a hurry, at a price, put your problem up to us, and we'll solve it for you.

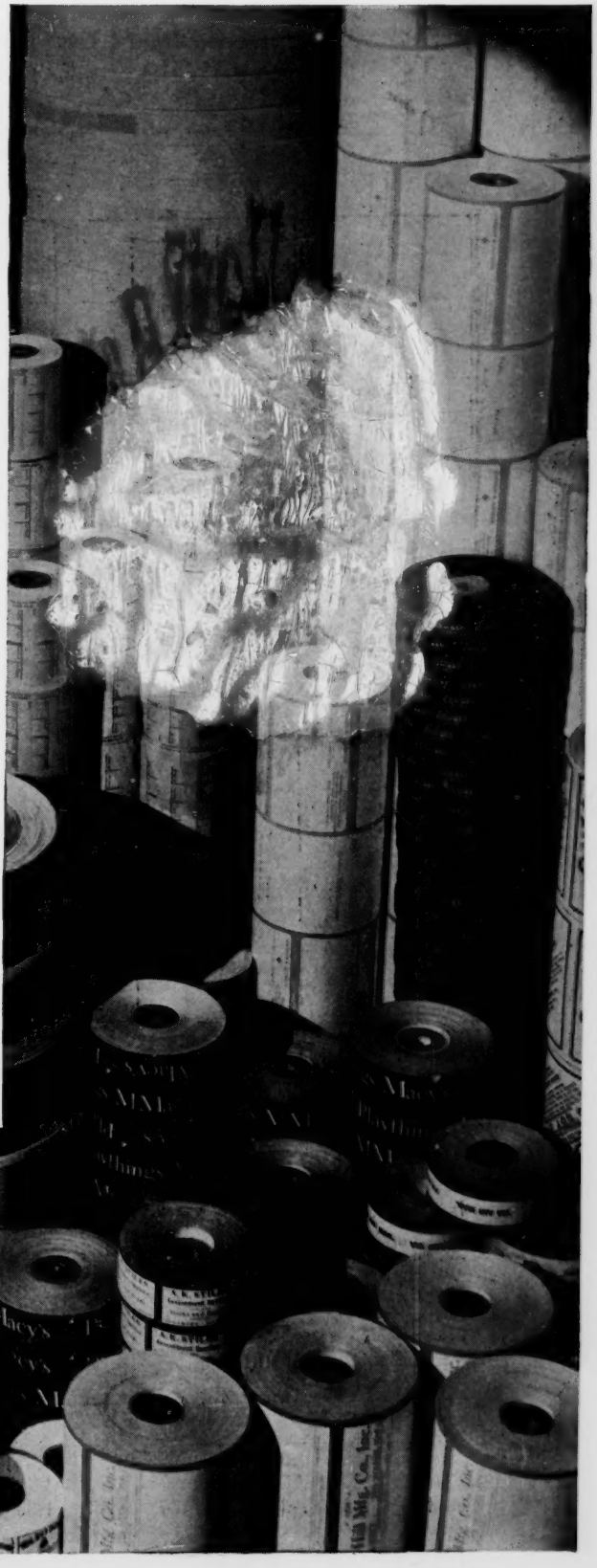
We have a battery of thirteen special printing presses, each capable of printing as high as 4,000,000 labels EVERY TWENTY-FOUR HOURS IN ONE OR TWO COLORS, and each also capable of many unusual operations. These presses, for example, take a roll of paper at one end, and while automatically fed through the press, prints, punches, perforates, numbers, rewinds in rolls or cuts single, label by label. We also have three color equipment, recently installed, and capable of as wide a variety of uses.

SPECIALIZATION AFFECTS EVEN LABELS

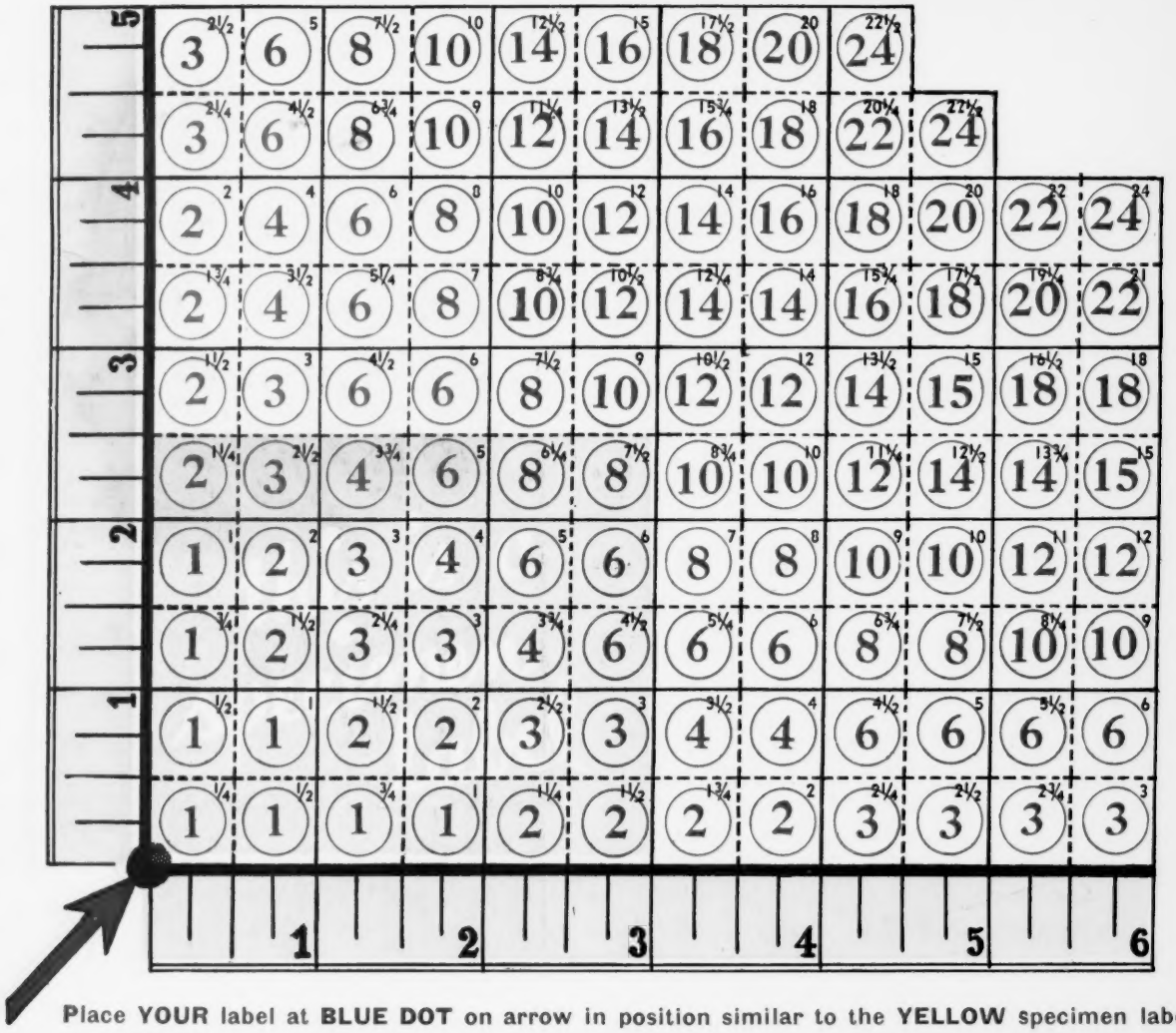
Remember this — Ever Ready specializes only in label production. Years of experience have produced master label craftsmen, and when you call on Ever Ready to serve you, you secure the advantage of that highly specialized experience.

Contents Copyrighted 1932
By

Ever ready Label Corporation
WAtkins 9-2112
257-265 WEST 17th STREET
NEW YORK, N.Y



NOW! You Can ESTIMATE THE PRICE of Ever Ready Labels



Place YOUR label at BLUE DOT on arrow in position similar to the YELLOW specimen label.

IMMEDIATELY—upper right point of label strikes the red encircled series number, which refers to the price list below.

Red number is the key to simplified price list and your estimate. (Small blue number gives actual square-inch area.)

This simple price-finding method applies to white gummed labels printed in red, blue, black or green ink.

For prices on two color printing or colored papers refer to special price list on each of the following pages: 17-31 inclusive.

Please note by example below, that by multiplying the length times the width of any label, the square inch area is obtained. This is definitely the basis of our method for pricing labels. This chart simplifies this simple method. **All prices per thousand.**

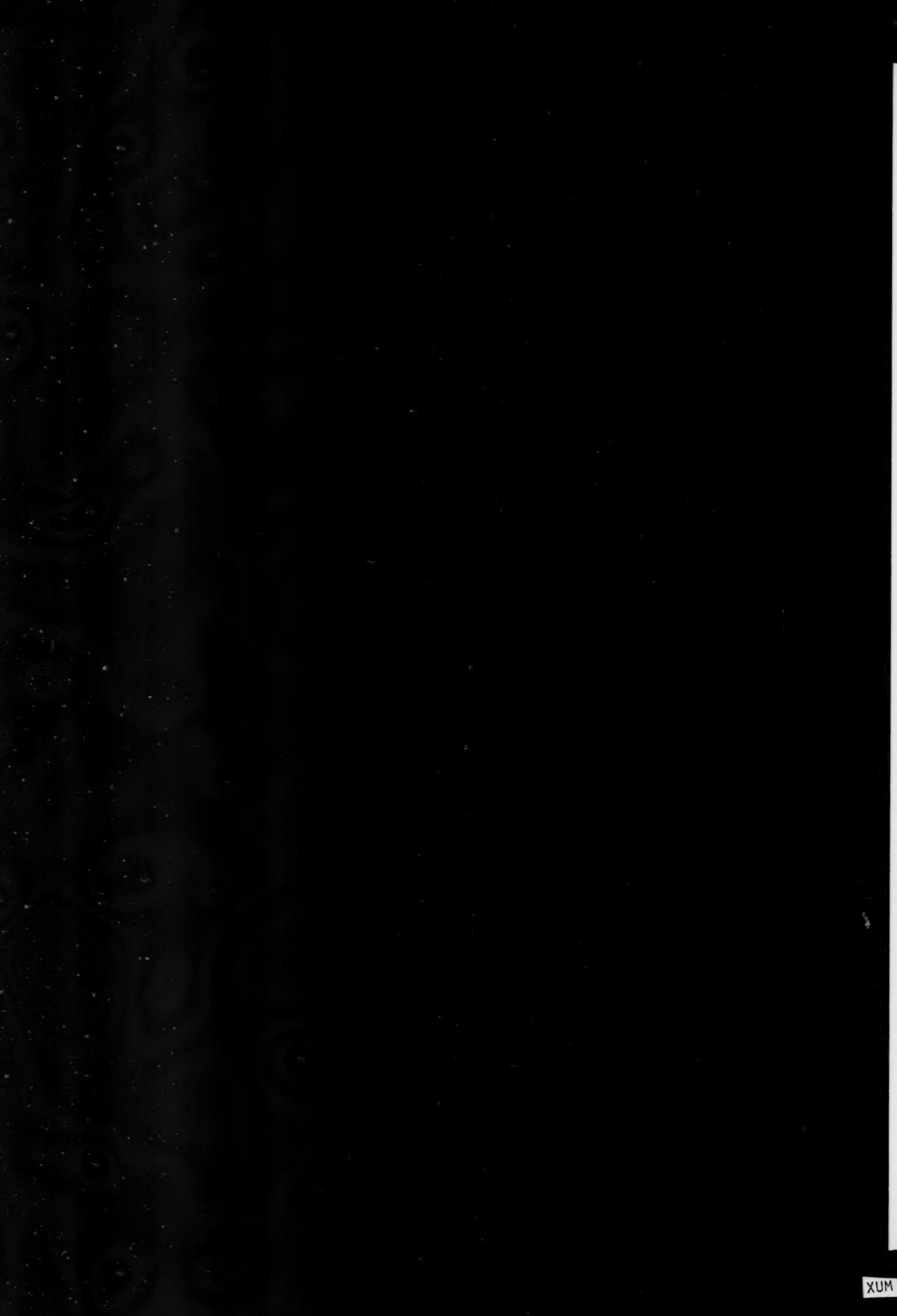
Example: 2½" x 3" equals 7½ square inches or Series No. 8 label. 3" x 5" equals 15 square inches or Series No. 15 label.

Explanation—Having secured SERIES OR KEY NUMBER on chart this price list estimates 5M, 10M and 25M respectively under red series number:

Series No. or Sq. In.	1	2	3	4	6	8	10	12	14	15	16	18	20	22	24
5M	$.55	.60	.70	.90	1.15	1.35	1.50	1.70	1.80	1.90	2.00	2.20	2.40	2.55	2.70
10M	.50	.55	.65	.80	1.00	1.20	1.30	1.50	1.60	1.70	1.80	1.85	2.00	2.10	2.40
25M	.40	.45	.55	.70	.90	1.05	1.15	1.35	1.45	1.50	1.60	1.70	1.85	1.95	2.25

PLEASE SEE PAGE 16 (POST OFFICE APPROVAL FOR EVER READY LABELS) ALSO PAGE 32 (THE EVER READY GUARANTEE).

XUM



XUM

General Post Office Information for Shippers

The U. S. Post Office has certain rules and regulations regarding address labels. You should follow them on your own parcel post labels.

CONTENTS: MERCHANDISE
Postmaster: This parcel may be opened for postal inspection if necessary.
FROM
EVER READY LABEL CORP.
257 W. 17th Street New York, N. Y.
RETURN POSTAGE GUARANTEED

No. 1

EVER READY LABEL CORP.
257 WEST 17th STREET
NEW YORK, N. Y.
RETURN POSTAGE GUARANTEED

Refer to Page 16
For U. S. Post Office Approval
of Ever Ready Labels

No. 2

EVER READY LABEL CORP.
257 W. 17th Street New York, N. Y.
RETURN POSTAGE GUARANTEED
POSTMASTER: IF NOT DELIVERED IN 10 DAYS, CHECK REASON FOR NON-DELIVERY AND RETURN TO US. DO NOT RETURN BEFORE EXPIRATION OF 10 DAYS, REGARDLESS OF REASON FOR NON-DELIVERY. (SEE AMENDED SECS. 595 & 637 P. L. & R.)
UNCLAIMED ☐ REFUSED ☐ UNKNOWN ☐
ZONE 1 2 3 4 5 6 7 8
No.
DUE SENDER $_____
M. O. FEE_____
TOTAL_____
Weight_____ Postage_____

No. 3

EVER READY LABEL CORP.
257 WEST 17th STREET
NEW YORK, N. Y.
RETURN & FORWARDING POSTAGE GUARANTEED
POSTMASTER: If not delivered in 15 days check reason for non-delivery and return to us.
Unclaimed ☐ Refused ☐ Unknown ☐
ZONE
LOCAL 1 2 3 4 5 6 7 8
INSURED
No.
Weight_____ Postage_____

No. 4

Third & Fourth Class (Parcel Post) Mail

For Third Class, up to 8 ozs., and Fourth Class, over 8 ozs. (Parcel Post) Mail, the shipper's name must include the name and address (including street address) as well as the words "Return Postage Guaranteed" if the package is to be returned in case of non-delivery. This copy should be placed in the upper left corner of the address side. Your return card should **never** be printed at the bottom of the label—it should always be at the top or at the left end of the label.

The reason for this regulation is that **a mail clerk is accustomed to look at the bottom of the label for the destination of the package.**

A package with a label having the sender's card printed at the bottom, is apt to be returned to the city from where it was mailed.

Approved Postal Forms 1-2-3-4 are obtainable in any size to meet your requirement.
See Price List Page 4.
C.O.D. and Insured Insignia must be red.

SEALED PACKAGES

To send sealed packages at parcel post rates—the package must bear a label with the following clause **PRINTED** on it:

CONTENTS — MERCHANDISE
POSTMASTER: This parcel may be opened for postal inspection if necessary. Return Postage Guaranteed.

This clause must be **PRINTED**—it cannot be written or typewritten on the label. When buying labels intended for use on parcel post shipments, be sure to have this clause included as part of the printed copy.

SEALED THIRD AND FOURTH CLASS (Parcel Post) MAIL

This is the prescribed copy for sealed packages of Third and Fourth Class matter. This copy must be printed and cannot be rubber stamped or written.

COLLECT ON DELIVERY MAIL

It is not absolutely necessary to have this copy printed on labels used for C. O. D. mail, but so advised by the post office where possible.

REGISTERED MAIL

The facsimile of the Post Office impression is printed in red and saves rubber-stamping at the Post Office. If a "Return Receipt" is wanted (for which there *is* an additional charge) this must also be printed on the package.

INSURANCE REGULATIONS

Insurance companies insuring parcel post shipments, and the Postal Authorities, request that nothing be printed on a label to indicate the contents of the package when such information might tempt a person to steal.
For Example: "Fresh Flowers" might be printed on a flourist's label but "Diamonds, Watches and Jewelry" should not be printed on a jeweler's label.

WHAT IS FOURTH-CLASS MATTER (Domestic Parcel Post)?

Fourth-class matter embraces that known as domestic parcel-post mail exceeding 8 ounces in weight and includes merchandise, farm and factory products, seeds, cuttings, bulbs, roots, scions, and plants, books (including catalogues), circulars and other printed matter, and all other mailable matter not embraced in the first and second classes. (Sec. 442, Postal Laws and Regulations).

Extent and usefulness of parcel post—The domestic parcel post offers a convenient, quick, and efficient means of transporting mailable parcels to any post office in the United States or its possessions. The service reaches more places than any other transportation agency. It brings producers and consumers into closer contact, thus opening the way to reducing the high cost of living and is therefore especially advantageous for shipments of farm products. Low postage rates, based on the service rendered, are provided. The rates to near-by zones are particularly advantageous. Parcels may be insured against loss and may be sent C. O. D.

Rates of postage on fourth-class matter—to be fully prepaid—are by the pound, according to distance or zone, a fraction of a pound being computed as a full pound.

© 1932—Ever Ready Label Corporation, New York, N. Y.

Ever Ready STOCK LABELS

No. 5 Labels Nos. 5-17 inclusive are 3" x 1¼"

No. 6

No. 7

No. 8

No. 9

No. 10

No. 11

No. 12

No. 13

No. 14

No. 15

No. 16

No. 17

5A—BILL-IN
6A—C.O.D. WITH SPACE
7A—TODAY
8A—FIRST CLASS MAIL
9A—FRAGILE LIQUID
10A—OPEN THIS END
11A—SPECIAL HANDLING
12A—SPECIAL DELIVERY
13A—PERISHABLE

All labels on this page are Red and White except as noted, and come 1000 to a roll.

Well printed, well gummed, easily separated—deep perforation. Convenient carton holder, illustrated below.

Large users are asked to advise specific needs. We'll quote interesting prices.

No. 21

No. 22

Nos. 21 - 22—Actual size 3½"x6". 1M $3.50 per thousand. 5M $2.50 per thousand. 10M $2.10 per thousand

Ever Ready Shipping Room Stickers

Furnished 1,000 to a roll, gummed—perforated labels are withdrawn from closed carton.

Convenient - Sanitary

No. 22½—Illustrated actual size. 1M $1.00 per thousand. 5M $0.75 per thousand.

Nos. 23 and 24—Illustrated actual size. 1M $1.50 per thousand. 5M $1.00 per thousand.

All Air Mail Stickers are red, white and blue as per post office requirements. One dozen of any one will be sent gratis upon request.

No. 22½

Nos. 18 and 19—Actual size 3½"x5½". 1M $3.50 per thousand. 5M—$2.25 per thousand. 10M—$1.90 per thousand.

No. 20—Actual size 4"x4". 1M—$3.00 per thousand. 5M—$1.80 per thousand.

Any special requirements can be made up to order.

No. 18

No. 20

No. 23

No. 19

No. 24

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Ever Ready Retail Stores Stock Labels

No. 25

No. 25—Actual Size 1½" x 2½".
1M—$1.25 per thousand
5M—$0.85 per thousand
10M—$0.75 per thousand

No. 26

No. 26—Illustrated Actual Size.
1M—$0.75 per thousand
5M—$0.50 per thousand
Carried in the same titles as on page 6

No. 27

Nos. 27, 28, 29
Actual Size 2" x 4½"
1M—$2.00 per thousand
5M—$1.35 per thousand
10M—$1.15 per thousand

No. 28

No. 30—Actual Size, 3" x 4".
1M—$2.50 per thousand
5M—$1.60 per thousand
10M—$1.40 per thousand

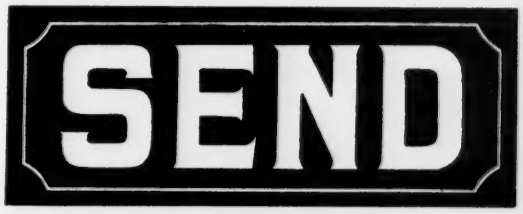
No. 29

No. 31—Illustrated Actual Size.
1M—$1.00 per thousand
5M—$.70 per thousand

No. 30

No. 31—Illustrated Actual Size.
1M—$1.00 per thousand
5M—$.75 per thousand
10M—$.60 per thousand

Larger quantities subject to special quotation.



No. 32

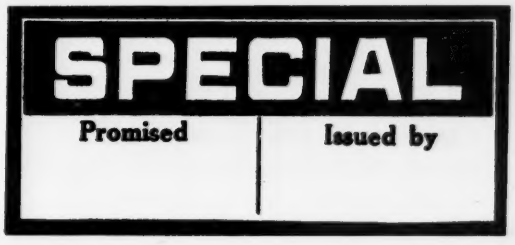
No. 33

No. 34

No. 35

No. 36

No. 37



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Ever Ready STOCK LABELS

Actual Size
No. 38—1M—$1.00 per M. 5M—$0.75 per M. 10M—$0.60 per M.

Actual Size
No. 39—1M—$1.00 per M. 5M—$0.75 per M. 10M—$0.60 per M.

Actual Size
No. 40—1M—$1.00 per M. 5M—$0.75 per M. 10M—$0.60 per M.

No. 41—1M—$1.00 per M
5M— .60 per M Actual Size

No. 43—1M—$1.00 per M
5M— .60 per M Actual Size

No. 42—1M—$1.00 per M
5M— .60 per M Actual Size

No. 44—1M—$1.00 per M
5M— .60 per M Actual Size

Actual Size
No. 45—1M—$2.50 per M
5M— 1.50 per M

In this section we have segregated those labels that are used most frequently by retail stores, department stores, specialty stores, etc.

These are sold in units of 1000 labels—some in rolls, others flat — some printed red, others blue on white gummed paper. We will be pleased to send actual samples of any stock labels —always specify number.

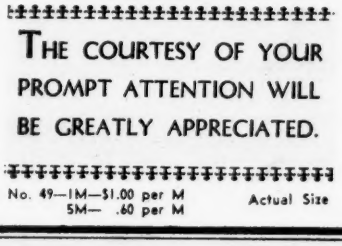
Nos. 38-40
Illustrated Actual Size
Red on White

Three labels in the most modern designs —brilliant red in color, and vastly superior to most stock stereotyped stickers. Recommended for distinctive stores or merchandisers.

No. 46—1M—$1.00 per M
5M— .60 per M Actual Size

No. 47—1M—$1.00 per M Actual Size

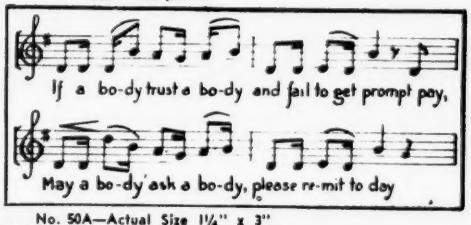
No. 48—1M—$1.25 per M
5M— .90 per M Actual Size



No. 49—1M—$1.00 per M
5M— .60 per M Actual Size

There never was a product made
(This truth we must confess)
But what some Bird could make it worse
And sell his stuff for less.

No. 50—1M—$1.00 per M
5M— .70 per M Actual Size



No. 50A—Actual Size 1¼" x 3"
1M—$1.00 per M. 5M—$0.75 per M.

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XUM

Ever Ready STOCK LABELS

Speed Up Direct Mailings!

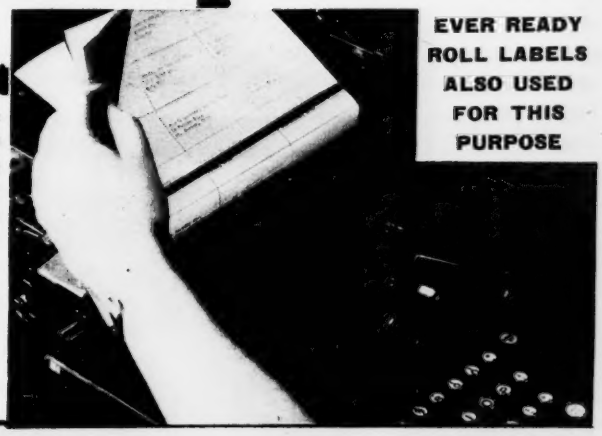
Blank Strip Labels
24 on a Sheet

Mr. Leon H. Lewis
64 E. Lake St.,
Chicago, Ill.

No. 51

PRICES

3,000 Labels	(125 sheets)	$.75	per thousand
6,000 "	(250 sheets)	.60	" "
12,000 "	(500 sheets)	.50	" "
24,000 "	(1000 sheets)	.40	" "
48,000 "	(2000 sheets)	.30	" "



EVER READY ROLL LABELS ALSO USED FOR THIS PURPOSE

Now your operators can type up your address labels even in duplicate, triplicate, or in as many copies as you need, with more speed and much greater ease in handling. Handy too for making lists to be attached to file cards or records. Also handy for addressing large catalog envelopes that can't be run through your typewriter. That means you can buy your envelopes when and as needed.

Instead of addressing one label, taking it off the machine, putting in another, etc., the operator types 24 with one insertion.

Labels are gummed on one side.

The size of the full sheet (8½ x 11) 24 labels.

Remember this—it takes less room to store addressed lists on 24-sheet labels than on envelopes.

EVER READY BLANK STOCK LABELS

Adapted for use on containers of all kinds (wood, glass, metal, stone, cloth, cardboard, etc.). Will take any copy you want—are excellently suited for private or personal labels and office forms, etc. Delivered in rolls or flat in lots of 5,000 or more. 1,000 labels to the roll.

Same price for labels either printed or plain.

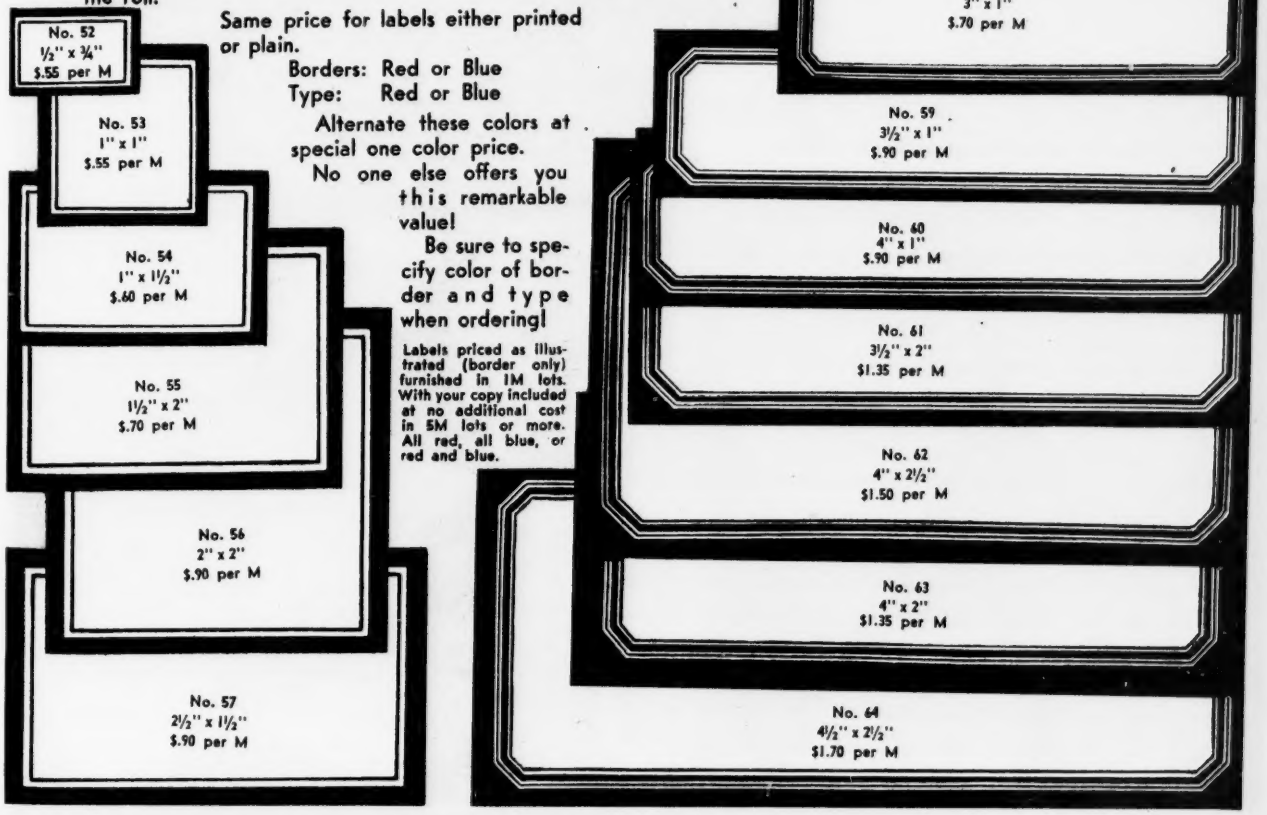
Borders: Red or Blue
Type: Red or Blue

Alternate these colors at special one color price.

No one else offers you this remarkable value!

Be sure to specify color of border and type when ordering!

Labels priced as illustrated (border only) furnished in 1M lots. With your copy included at no additional cost in 5M lots or more. All red, all blue, or red and blue.



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Ever Ready Stock Labels

GOOD MORNING!
You can use this space
for any copy you want.
No. 66—Illustrated Actual Size
1 M—$3.50 per thousand. 5 M—$1.35 per thousand

No 66

Nos. 67, 68, 69

Handsomely Embossed

1 M—$1.50 per thousand (one kind)

No. 66 (at left)—Illustrated Actual Size. 1M—$3.50, 5M—$1.35 per thousand, has many possibilities. Imprint your copy and use as correspondence novelty. Now used by railroads, hotels, etc., when giving away newspapers, etc.

No. 67—Green and White

No. 68—Red and White No. 69—Blue and White

70

71

72

70 A

71 A

72 A

DUMMY STAMPS (Above)

These labels represent stamps, put up in special rolls of 500; in the exact size of the Government Stamp, perforated in exactly the same manner and used in conjunction with Stamp Affixing Machines, such as the Standard Stamp Affixer, the Multipost, and similar machines marketed for affixing Government Postage Stamps. These can be furnished in the blank as well as printed.

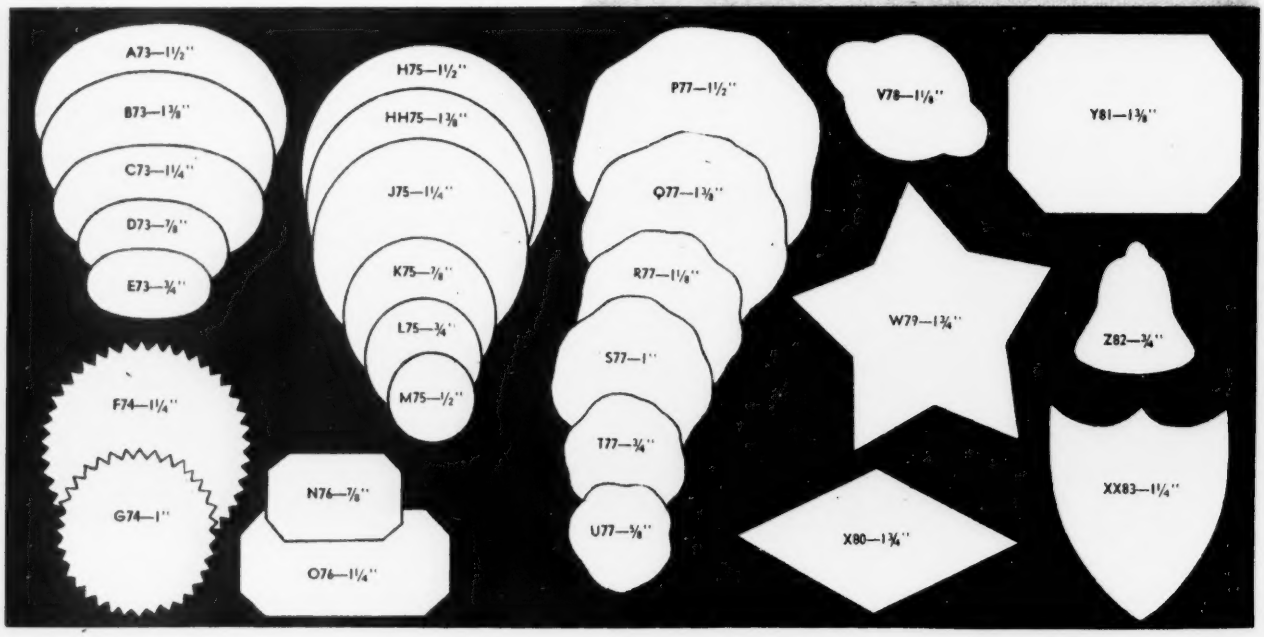
They are splendidly adapted for sealing direct mail literature, for identifying merchandise by trade-mark, where rapid application is required and can be applied with a Stamp Affixing Machine. We are equipped to make these and other special requirements similar to this. Prices quoted on request.

PLAIN DIE CUT GUMMED UTILITY STICKERS AND SEALS (See Price List and Chart Below)

To mark or price products—To seal circulars, broadsides, folders (clips not permitted)—To attach cards—for swatches—for embellishment and innumerable practical purposes. Can be had in hundreds of other shapes. Can be specially printed—Write for special prices—Ask for samples and consult on special needs.

Description and Quantity→	White—Extra Gummed 5M	10M	25M	Waterproof Colors* 5M	10M	25M	Gold or Silver Non-Tarnishable 5M	10M	25M
1" or less Diameter	$.25	.20	.18	.30	.25	.22	.50	.40	.35
1½" or less Diameter	.35	.28	.24	.45	.35	.30	.70	.60	.54
2" or less Diameter	.50	.40	.34	.60	.45	.40	1.05	.95	.85

*Colors available: Red, orange, yellow, green, blue, brown, black and pastel shades.
SPECIAL PRICES ON LARGER QUANTITIES—ALL PRICES ARE PER THOUSAND.



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XUM

Ever Ready Collection Stickers

70 Action Producers!

No. 85

No. 86

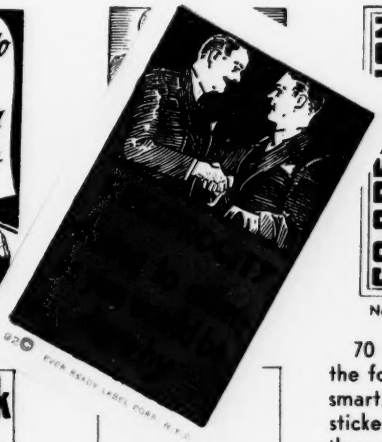
No. 87

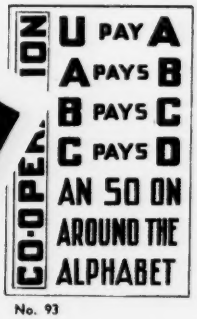
No. 88

No. 89

No. 90

No. 91

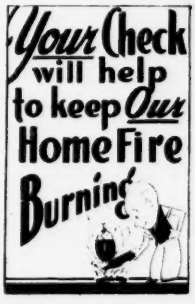




No. 93

No. 94

No. 95

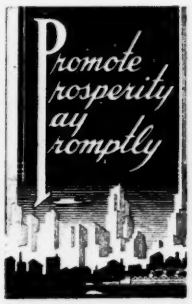


No. 96

No. 97

70 Dunning and Collection Stickers, shown on the following six pages, indicates our belief that smart, attractive, colorful and epigrammatic stickers of this type, are effective for the job they are planned to do. All of these have been carefully designed and the copy edited toward a definite useful purpose. The carefully planned letter of the Credit Man and the conservative correspondence, relative to "Big Business" is thoroughly respected by us, yet, experience by demand from thousands of customers, indicate that in the largest percentage of cases, a gentle nudge, a slight hint, some subtle humor will prompt the creditor to action, and retain that most valuable business asset—Good Will.

Why so many ideas and kinds—you might ask? We know that the collection problem is a personal problem, just as much as a sales problem. We know too, there is a human side to business as well as a commercial side. With competition strong, a little, thoughtful appeal often tips the scales of good will in your favor. And so, this assortment is prompted because your personal approach to every particular customer is a matter of some thought and the proper application of the particular sticker.



No. 98

No. 99

"BUSINESS COURTESY PAYS"

The most handsome, brilliant and elaborate series of collection stickers ever offered. These stickers are printed in two colors, red and blue on silver gummed paper. Actual size 1½ x 2.

Sold in units of 100, (100 to the pad, all of one design). In quantities larger than 1,000, assortments are permitted. With every order for 1,000 stickers we give you 200 stickers, two pads free.

1,000 (assorted) $4.00 and 200 FREE
5,000 (assorted) $3.50 per M and 1000 (10 pads) FREE
10,000 (assorted) $3.00 per M and 2000 (20 pads) FREE

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Ever Ready "GOLDEN RULE" COLLECTION STICKERS

No. 100

WE SURE WOULD BE HAPPY
If you'd treat this bill snappy
And send that check today
If the till is empty.
Even tho' we lack plenty
A small check would mean part pay.

No. 101

No. 102

"SINGIN' IN THE RAIN"
I'm singing in the rain....
Yes, singing in the rain....
What a glorious feelin'
If you'd pay once again,
You'll sing too—if you do
Cause one can blow—if one doesn't owe.

No. 103

No. 104

TIME'S UP!
We've counted TEN—To keep our disposition
We're thinking of the Inquisition
We're wondering when you'll loosen up.
We're crying out—TIMES UP!

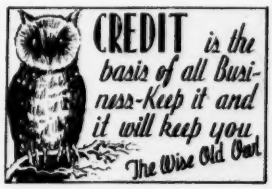
No. 105

No. 106

No. 107

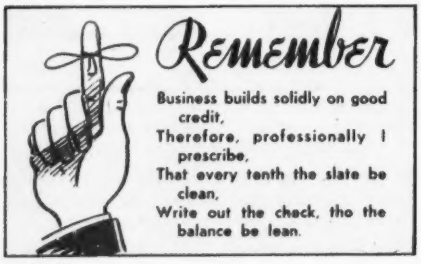
BLUE?
NOT US
BECAUSE
the same Faith that prompted extending Credit assures us of your immediate attention. Won't you?
Please.

No. 108



No. 109

No. 110


Remember
Business builds solidly on good credit,
Therefore, professionally I prescribe,
That every tenth the slate be clean,
Write out the check, tho the balance be lean.

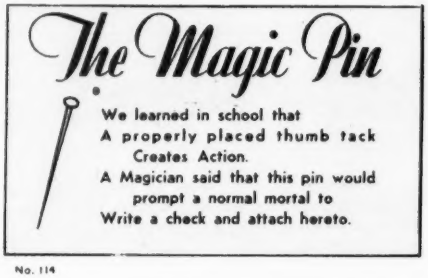
No. 111

..and Please send in a check
Day by Day in every way,
We write you letters—
Kneel and Pray,
Hoping they will take effect
Please Oh Please—
Send us your check.

No. 112

GOOD ACCOUNT
and he was such a fine fellow
Over due accounts can get so mellow,
Can't you think of the other fellow?
Don't send flowers when they're dead,
Pay up prompt—send cheer instead!

No. 113


The Magic Pin
We learned in school that
A properly placed thumb tack
Creates Action.
A Magician said that this pin would
prompt a normal mortal to
Write a check and attach hereto.

No. 114

No. 115

We're anxiously awaiting your
Courteous consideration. In this envelope we've put our Head and Heart—Ambassadors to plead with you for the past due account.

No. 116

Yours for snappy yet dignified collections. Stand out impressively on any style or color letterhead or business stationery. These are genuine action compelling stickers that do not beg or threaten but do educate your customers to the advantages of prompt payment.

Golden Rule stickers printed on a gummed stock that looks like 14 karat gold. They've been tested on thousands of accounts and proved effective on both large and small amounts. Sold in quantities of 1000 or more, 100 stickers to the pad.

Nos. 100-110—Printed in Brilliant Blue Black on Gold Stock.

● $3.00 per thousand.

Actual Size Nos. 100-110—1½x2¼.

Nos. 111-116—Printed in two colors, Brilliant Blue Black and Red on Gold Stock

● $4.50 per thousand.

Actual Size Nos. 111-116—2¼x3¼.

TRY THEM ON YOUR NEXT STATEMENTS

You deduct 15% from total price if you buy 5000 (one kind or assorted).

You deduct 25% from total price if you buy 10,000 (one kind or assorted).

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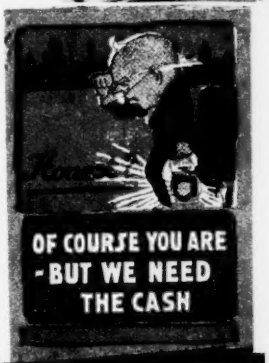
Ever Ready Collection Stickers

let "ole bill" plead your case

OLE BILL" STICKERS
collect past due bills for you!
The bookkeeper's handy package of collection stickers. Used by mercantile houses, manufacturers, retailers, professional men—everywhere!
100 STICKERS TO THE PAD
12 PADS TO THE BOX
any assortment
$3.50



No. 117

this label is actual size

Old Bills!

Me… eeper who with subtle hur… e signing of the check by … h smiles and laughter aw…

The … ondent and the intelligen… t belittled by the use of t…

"Ol… g used effectively by well… acturers, retailers and prof… ve. There are twenty-four … at best fits your case and … ctions start coming in.

Twelve hundred "Ole Bill" stickers come in a handy bookkeeper's box (note illustration above) made to hold twelve pads. Each pad contains 100 gummed "Ole Bill" stickers. There are twenty-four to select from. You make your own assortment.

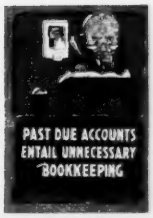
Note this — All are printed in three vivid colors—yellow, red and blue, making a striking appearance in contrast to your stationery.

We Make This Offer

Let us send you YOUR ASSORTMENT of "Ole Bill" for $3.50. Pick out the styles you like best and try them immediately. If you get no results and no favorable comments, return the balance and with no questions asked we'll return your remittance.

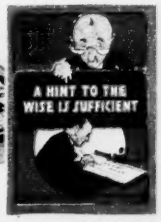
PRICE PER BOX 1200 Labels,
12 Pads — 100 stickers each **$3.50**

No. 118



No. 119

No. 120



No. 121

No. 122

No. 123

No. 124

No. 125

No. 126

No. 127

No. 128

No. 117A

No. 118A

No. 119A

No. 120A

No. 121A

No. 122A

Ole Bill Sez—
It's simply necessary that customers show us the same consideration we have always shown them
Wont you send a check?

No. 123A

No. 124A

No. 125A

No. 126A

No. 127A

No. 128A

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Ever Ready Collection Stickers

We are required to report all past due accounts to our local credit bureau. An early payment protects your interest.

No. 129

No. 129 and 140. Illustrated Actual Size.
1M—$1.00 per thousand
5M—$.75 per thousand
Nos. 130-132. Illustrated Actual Size. Red diamonds, and center printed in blue. Die cut to shape, unusual effect produced.
1M—$2.00 per thousand
5M—$1.25 per thousand

"Successful business demands prompt collections and prompt payment. We request prompt payment in the same courteous manner we solicit your trade. Both are necessary for our success."

No. 130

We are still looking for your check to cover our statement of_____ for $_____ We feel sure that we can count on you for a remittance by return mail.

No. 131

THE LAST MAIL
Has Arrived
We were disappointed because of your failure to send a remittance to cover our statement of_____ for $_____
We must insist on a check by return mail.

No. 132

Nos. 133-139. Illustrated Actual Size.

Some in red, some in blue.

Quantities over 1000 may be assorted as you wish.

Furnished in convenient rolls of 1000.

OUR CREDIT IS GOOD
BECAUSE YOU PAY YOUR ACCOUNT HERE PROMPTLY
THANK YOU

No. 133—1M—$1.00 per M 5M— .75 per M

WE WANT YOU TO KNOW THAT
YOUR PATRONAGE HERE IS APPRECIATED

No. 134—1M—$1.00 per M 5M— .75 per M

We have been waiting to hear from you on this account. If not convenient to settle in full at this time, a partial payment will be appreciated.

No 135—1M—$1.00 per M 5M— .75 per M

We believe this account has been overlooked and take this means of reminding you that it is due and trust you will remit promptly.

No. 136—1M—$1.00 per M 5M— .75 per M

The repeated demands for the collection of small accounts entail an expense absorbing all profit. We trust that you will give this request for a settlement of your account immediate attention.

No. 137—1M—$1.00 per M 5M— .75 per M

This account, which is past due, has probably been overlooked by you. We would appreciate your early attention.

No. 138—1M—$1.00 per M 5M— .75 per M

IF THERE IS ANY REASON WHY THIS ACCOUNT SHOULD NOT BE PAID WITHOUT FURTHER DELAY, KINDLY INFORM US.

No. 139—1M—$1.00 per M 5M—$.75 per M

As termination of our fiscal year approaches, we desire to close our books with all accounts balanced.

Payment will be appreciated.

No. 140

Nos. 141-143. Illustrated Actual Size. Brilliant red, white and blue colors.
1M—$2.00 per thousand.
5M—$1.25 per thousand.

PAST DUE!
Please favor us with a remittance by return mail
Thanks

No. 141

All *charges are made on a 30-day basis Please!*

No. 142

Won't you please tell us if there is reason why payment of the account has been withheld.
Thank you

No. 143

© 1932 by Ever Ready Label Corporation, New York, N. Y.

Ever Ready Collection Stickers

Just now the Bookkeeper said, "Don't they ever pay their bills?" My chin dropped.

After all, we served and satisfied.

Aren't we entitled to kind consideration?

Please justify my faith in you by mailing a check today.

Cordially yours,

U-Sign-Here

No. 144—1M—$2.75 per M
5M— 1.50 per M

Cardiac Hyperthrophy--
A medical expression for a big heart.

This reminder is intended as an appeal to a big heart and an overflowing check book.

We've been patient a long time.

Thanks.

Cordially yours,

No. 145—1M—$2.75 per M
5M— 1.50 per M

It's strange how often small things are overlooked.

Star gazers concentrate to enlarge small things, and acorns grow to be large oaks, but--

This stagnant account isn't making our bank account larger and we're asking you to look into it with your strongest glasses.

Oh, how grateful we'd be.

Cordially yours,

(Above) No. 146—1M—$2.75 per M
5M— 1.50 per M

No. 147—1M—$2.75 per M
5M— 1.50 per M (Below)

We're on the warpath.--

Necessity prompts many things.

If the pen be mightier than the sword, we'd be grateful if you'd sign a check.

Transfer that part of your wealth which has rightfully belonged to us for many weeks.

We don't like to be quarrelsome.

Cordially yours,

No. 148—
1M—$2.50 per M. 5M—$1.75 per M

YOU CAN MAKE BUSINESS BETTER BY PAYING A LITTLE ON THIS ACCOUNT
A growing list of delinquent accounts is a drag on any business. To discount our own bills we MUST collect outstanding accounts on our books promptly. Why not pay something on you account NOW.

No. 149—1M—$2.00 per M
5M— 1.00 per M

YOU CAN PAY A LITTLE EVERY WEEK ON YOUR ACCOUNT
We don't measure the value of a customer's account by its size, or by the amount he pays on it. By paying a little you show the right spirit and it helps to maintain friendly relations. May we expect your check by return mail?

No. 150—1M—$2.00 per M
5M— 1.00 per M

No. 151
$.75 per M

No. 152
$.75 per M

MOONSHINE TWINS
"Before and After"
Printed black on brilliant mellow, yellow.
Simple—suggestive—effective.

Stock Dunning Stickers

If you want more conservative dunning stickers, glance over these. There are several styles attractively designed and cautiously worded for a short and sweet message—non-offensive and extremely productive of results. Some are red, some blue. Pasted on the statements, these spots of color center attention and cry out your request.

Samples of any collection stickers will be cheerfully sent on request.

Nos. 144-147. Unique, humorous, expressive sentiments. Reproduced to appear as if typewritten. You sign your name and the collection effort is personalized 100%. Gummed—just tip on statement.

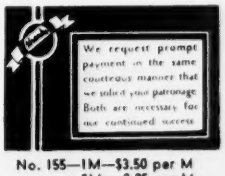
Nos. 153-156—Actual Size 1½" x2½".

No. 153—Red on White Paper.
No. 154—Red and Blue on White.
No. 155—Black on Silver.
No. 156—Black on Silver.

No. 153—1M—$2.50 per M
5M— .75 per M

FINAL
Various statements have been mailed you. Further delay may compel us to use unpleasant methods for collections.
FINAL

No. 154—1M—$3.50 per M
5M— 2.25 per M


We request prompt payment in the same courteous manner that we solicit your patronage. Both are necessary for our continued success.

No. 155—1M—$3.50 per M
5M— 2.25 per M

No. 156—1M—$3.50 per M 5M—$2.25 per M

© 1932—Ever Ready Label Corporation, New York, N. Y.

This letter of approval from the United States Post Office Department covers the correctness of form of Ever Ready Labels.

These shipping labels are the proper Post Office approved forms for parcel post shipments. We suggest that you see your local postmaster if you are considering the use of any other arrangement. He will advise you properly.

Remember—the Post Office is willing and anxious to cooperate thoroughly with you on matters that will speed up your mailing service

EVER READY LABELS Okayed by U.S. POST OFFICE

Post Office Department
THIRD ASSISTANT POSTMASTER GENERAL
Washington

DIVISION OF CLASSIFICATION

IN YOUR REPLY REFER TO C.S. No. 5:0877

March 24, 1932.

Mr. Sidney Hollaender,
Ever Ready Label Corporation,
257 West 17th Street,
New York, New York.

My dear Sir:

In reply to your letter of the 16th instant, submitting a photostat of a page which the Ever Ready Label Corporation intends to insert in its catalog, showing a number of address labels printed by that Corporation, you are advised that the labels reproduced on the sheet numbered from 157 to 170, inclusive, are in harmony with the provisions of the postal laws and regulations governing the preparation of address labels and, therefore, parcels bearing such address labels otherwise conforming to the requirements of the postal laws and regulations are acceptable.

It is understood that label No. 165 is to be placed on parcels in connection with the return of the sender.

Very truly yours,

F. H. Tilton,
THIRD ASSISTANT POSTMASTER GENERAL

CONTENTS MERCHANDISE, FOURTH CLASS MAIL
POSTMASTER: This parcel may be opened for postal inspection if necessary
RETURN IN 5 DAYS TO
THE WICKER CORPORATION
431 SO. DEARBORN ST. CHICAGO, ILL.
RETURN POSTAGE GUARANTEED
For
No. 157

From MERCK & CO.
45 Park Place
New York, N.Y.
To
No. 158

CONTENTS MERCHANDISE FOURTH CLASS MATTER
POSTMASTER THIS PARCEL MAYBE OPENED FOR POSTAL INSPECTION IF NECESSARY
JUNIANNE
INCORPORATED
SUITE 518
No. 159

CONTENTS MERCHANDISE FOURTH CLASS MAIL
POSTMASTER THIS PARCEL MAY BE OPENED FOR INSPECTION IF NECESSARY
FROM DEMIRACLE CHEMICAL COMPANY
NEW YORK N. Y.
for
No. 160

CONTENTS MERCHANDISE
FOURTH CLASS MATTER
POSTMASTER THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY
POSTAGE GUARANTEED UNDELIVERABLE
FROM THE NEW HAVEN CLOCK CO.
20 WEST 47TH STREET
NEW YORK, N.Y.
FRAGILE
No. 161

CONTENTS
MERCHANDISE
POSTMASTER: This parcel may be opened for postal inspection if necessary
FROM
IDEAL SERVICE CO., Inc.
97 WALKER ST.
NEW YORK, N.Y.
TO
No. 162

CONTENTS MERCHANDISE FOURTH CLASS MAIL
POSTMASTER: This parcel may be opened for postal inspection if necessary
THE NESTLE-LEMUR CO.
10 EAST 49th STREET • NEW YORK, NEW YORK
RETURN POSTAGE GUARANTEED
HOW SHIP
OUR ORDER
YOUR ORDER
for
No. 167

CONTENTS · MERCHANDISE
POSTMASTER:
THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY
RETURN POSTAGE GUARANTEED
No. 165

CONTENTS MERCHANDISE
4th Class Matter
POSTMASTER: This parcel may be opened for postal inspection if necessary
Hubmark Rubber Co.
INCORPORATED
UTICA, N.Y.
FROM
HUBMARK RUBBER CO.
Incorporated
Utica, N.Y.
To
No. 163

For
FROM
P. ASTIER
LABORATORIES
NEW YORK
No. 168

CONTENTS MERCHANDISE FOURTH CLASS MAIL
POSTMASTER: This parcel may be opened for postal inspection if necessary
From
WILLIAM MILNE GRANITE CO.
BARRE, VERMONT
No. 170

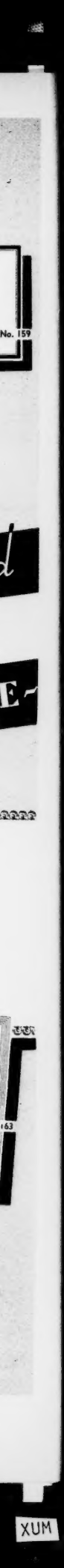
for
From
GUARANTEE SHOE CO.
117-119 ALAMO PLAZA
SAN ANTONIO, TEXAS
To
No. 169

FROM
VANDERBILT MILLS, Inc.
29 to 35 West 32nd Street
NEW YORK, N. Y.
for
SEC. 4359 P. L. & R.
U. S. POSTAGE PAID
New York, N. Y.
Permit 9320
No. 166

CONTENTS MERCHANDISE FOURTH CLASS MAIL
POSTMASTER: This parcel may be opened for postal inspection if necessary
"The Reliability of a Store should be your First Thought"
W. C. STRIPLING
"THE PRICE IS THE THING"
FORT WORTH, TEXAS
RETURN POSTAGE GUARANTEED
for
No. 164

© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM


No. 159
d
E-
163
XUM

XUM

Labels of these sizes are especially suited for marking merchandise to show its source, for indicating price, contents and many other uses suggested here.

The labels illustrated on the page show the range of dimensions covered by 1 and 2 square inch labels.

PRICES

① = Key No. 1 or 1 Sq. In. ② = Key No. 2 or 2 Sq. Ins.

①	②
5,000—$.55 per thousand	5,000—$.60 per thousand
10,000— .50 per thousand	10,000— .55 per thousand
25,000— .40 per thousand	25,000— .45 per thousand
50,000— .36 per thousand	50,000— .41 per thousand
100,000— .33 per thousand	100,000— .37 per thousand

PAPER—Prices apply to white, gummed labels, perforated in rolls.

For colored paper (Page 32) and 2-color printing add 25%—Supplied only in quantities of 25,000 and more.

Ungummed labels (minimum quantity 25,000), at 10% below prices listed.

INK—Standard colors: Red, Blue or Black.

No. 171—② —½ x 3 in.

No. 172—① —⅝ x ⅝ in.

No. 173—② —½ x 3 in.

No. 174—② —¾ x 1½ in.

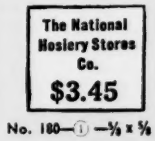
No. 175—① —¾ x 1 in.

*No. 176—① —¾ x 1¼ in.

No. 177—① —⅝ x ⅝ in.

No. 178—② —⅝ x 2 in.

No. 179—② —¾ x 2½ in.



No. 180—① —⅝ x ⅝ in.

No. 181—① —1 x 1 in.

No. 182—② —¾ x 3½ in.

No. 183—② —1 x 1¼ in.

*No. 184—① —¾ x 1⅛ in.

*No. 185—① —¾ x 1¼ in.

*No. 186—① —¾ x 1¼ in.

No. 187—① —1 x 1⅛ in.

No. 188—② —¾ x 2¼ in.

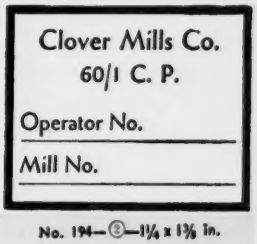
No. 189—② —¾ x 2 in.

No. 190—② —¾ x 2¼ in.

No. 191—② —¾ x 1¾ in.

No. 192—② —1¼ x 1⅜ in.

*No. 193—② —1 x 1¾ in.



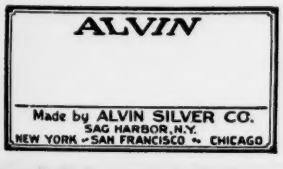
No. 194—② —1¼ x 1⅜ in.

Prices for larger quantities furnished upon your request.

When a quantity quotation is wanted send as much information as possible.

Handy Label Holder FREE with 5000 labels or more.

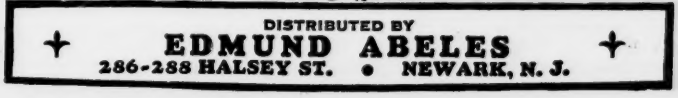
*Labels starred are printed from cuts, either supplied by you or furnished by us AT COST



*No. 195—② —1 x 1⅝ in.

There Are No Values Like Ever Ready Values

No. 196—② —½ x 4 in.



No. 197—① —1 x 1 in.

Contents © 1932—Ever Ready Label Corporation, New York, N. Y.

No. 198— ③—1¼ x 3¼ in.

RESTRICTED

NOT TO BE PERFORMED WITHOUT SPECIAL WRITTEN PERMISSION OBTAINED IN ADVANCE OF EACH

No. 200— ③— 1½ x 1¾ in.

SMALL ANIMAL HOSPITAL
Dr. J. W. McNeil
190TH ST. & HILLSIDE AVE.
HOLLIS, L. I.
Phone: Missouri 7-2550
7-3364

No. A 09988

No. A 09988

No. A 09988

LICENSED UNDER LEKTOPHONE PATENTS — 1,271,527 1,271,528 1,271,529 OTHER PATENTS PENDING

No. 199— ④—1½ x 2½ in.

This label is a guarantee that this TWINE is not made by Prison Labor or in State Prisons

*No 201— ④—2 x 2 in.

K. K. SYSTEM
Transparent
Crystal Cement
Unsoluble

GUARANTEED
WILL HOLD PERMANENTLY

No. 202— ④—1¾ x 2 in.

No. 204— ③—1½ x 1¾ in.

CAUTION!
DO NOT PUT TRACINGS INSIDE THIS TUBE

No. 203— ③—1 x 3 in.

Come To.....
TREGO COUNTY FAIR
WAKEENEY, KANSAS
Sept. 8-9-10

CONTENTS:
MERCHANDISE-FOURTH CLASS MAIL.
POSTMASTER: This parcel may be opened for postal inspection if necessary.
● FROM ●
GEO. BORGFELDT & CO.
111-119 East 16th Street
NEW YORK, N. Y.
RETURN POSTAGE GUARANTEED

No. 205— ②—1¼ x 2¼ in.

Mazda 63L
3 Cp. – 6-8 Volts
S. C. Base – G-6 Bulb
WESTINGHOUSE
Rear & Instrument

No. 206— ③—1½ x 1½ in.

Labels of these two sizes cover a wide range of general utility purposes. Note in particular No. 199 offering a possibility for manufacturing or identification systems. Our machines can number and perforate to make the label flexible for the most difficult requirements. These are, of course, subject to special quotations. No. 200 is used by a veterinarian. Surely if this type of business can use Ever Ready Labels, **you** can too!

The labels displayed on these two pages may be had in any of the following suggested sizes:

③			④		
1 x 3	½ x 5		1 x 3½	1 x 4	
1½ x 2	½ x 4½		1½ x 2½	1¼ x 3	
1½ x 1½	¾ x 4		1¾ x 1¾	2 x 1¾	
2½ x 1	¾ x 3		¾ x 5	1¾ x 2	
	¾ x 3½		2 x 2	¾ x 4½	

PAPER—Prices apply to white, gummed labels, perforated in rolls.

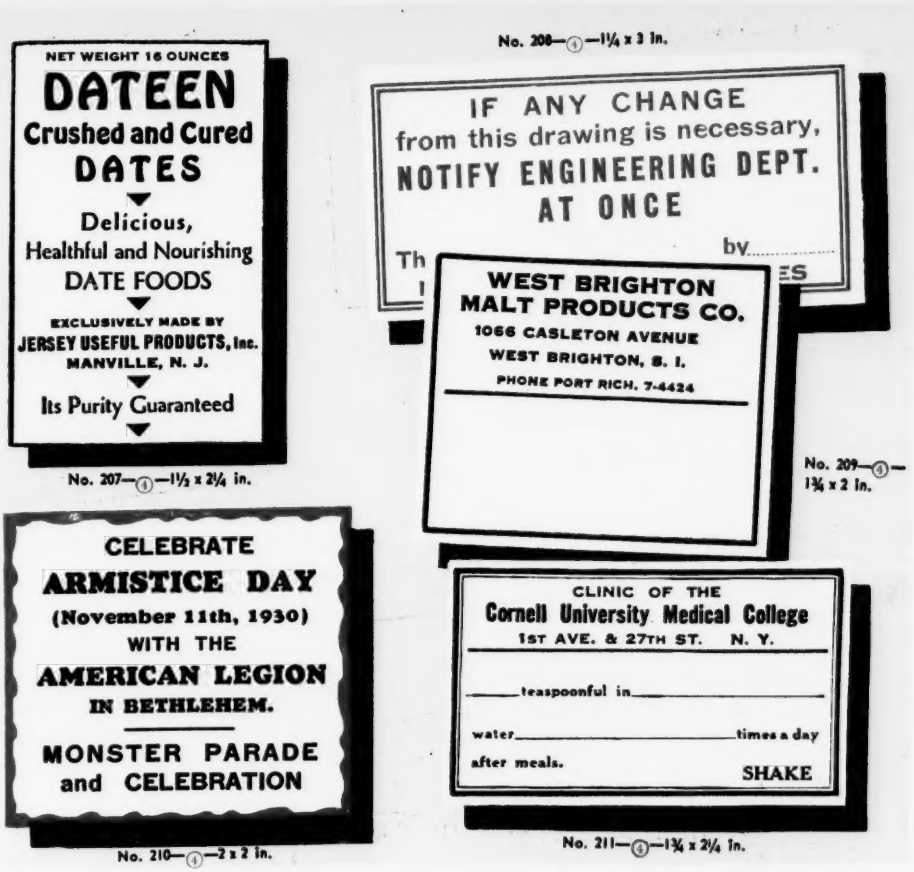
For colored papers (Page 32) and 2-color printing, add 25%—Supplied only in quantities of 25,000 and more.

Ungummed labels (minimum quantity 25,000) at 10% below prices listed.

INK—Standard colors: Red, Blue or Black.

© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM



PRICES

③	5,000 . . .	$.70 per thousand
	10,000 . . .	.65 per thousand
	25,000 . . .	.55 per thousand
④	5,000 . . .	$.90 per thousand
	10,000 . . .	.80 per thousand
	25,000 . . .	.70 per thousand

Prices for larger quantities upon your request.

When you want quantity quotations send us as much pertinent information as possible.

Handy Label Holder FREE with 5,000 labels.

* Labels starred are printed from cuts, either supplied by you or furnished by us at cost.

YOUR LABEL PROBLEMS ARE OURS TO SOLVE

© 1932—Ever Ready Label Corporation, New York, N. Y.

No. 216—(6)—1 x 5¼ in.

THAT'S COÖPERATION

The VOGUE Merchandising Department has planned cooperative events for many leading stores. Let us submit a program to you. • • •

*No. 218—(6)—2 x 3 in.

Spend your vacation at
AMERICAN
BEAUTY CONGRESS
Hotel Pennsylvania
NEW YORK CITY
Sept. 29, 30, Oct. 1, 1930

Phone: CAnal 6-8284 *Herbert Josephson*

The H. J. ELECTRIC CO., Inc.
Licensed
Electrical Contractors
85 KENMARE STREET
NEW YORK, N. Y.

Every Job Guaranteed ◆ You Must Be Satisfied

No. 217—(6)—2 x 3 in.

FRAGILE-LIQUID
CONTENTS - MERCHANDISE
Postmaster: This parcel may be opened for postal inspection if necessary.
A. S. HINDS CO. Bloomfield, N. J.

Sec. 435½ P. L. & R.
U. S. POSTAGE
PAID
Bloomfield, N. J.
Permit No. 6

INTRODUCTORY PACKAGE

No. 219—(6)—1¾ x 3½ in.

This size label especially suited for utility purposes. The smallest practical size convenient for a shipping label. These labels may be had in any variations of the following suggested sizes:

1	x 6	1¼	x 4½
1½	x 4	2	x 2½
1	x 5	2	x 3

Please...
SEE PAGE 16 (Post Office Approval of Ever Ready Labels)
PAGE 32 (Ever Ready Guarantee)

DIRECTIONS

To prepare hot starch, first mix the starch with enough cold water to make a paste; then add the boiling water and stir until it thickens.

DO NOT BOIL IT.

For cold starch use in the ordinary way.

Ideal Perfume Starch goes through the ironing process and PERFUMES the clothes.

Ideal Perfume Starch gives the most delicate and lasting perfume to ladies' lingerie, babies' garments and all starchable fabrics.

No. 220—(6)—2 x 3 in.

© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM

No. 221—⑥—1½ x 4 in. • Below

DOUBLE-FACED POWDER PUFFS

MANUFACTURED BY
OXZYN COMPANY VALMONT DIVISION 154 ELEVENTH AVE. N. Y.

NAME	SIZE	QUALITY	COLOR	DOZ.

These puffs are machine-made. They were manufactured in a modern well-lighted [illegible] methods approved by Pu[illegible]

Left •

*No. 222—⑥—1¾ x 2¾ in.

"PAWOOD" CIRCLE CUTTER
ADJUSTABLE 1" TO 4"
No. 1 WITH BEADING TOOL
PATENT PENDING
GE[illegible]

Charging Directions
FRAGILE – HANDLE WITH CARE

Bottle of Acid and Supply of Soda are in this box. Dissolve soda in water, filling extinguisher to projecting marker, about four inches below top of extinguisher.

Take rubber stopper out of Acid bottle and insert in its place the lead stopper accompanying extinguisher. Place bottle in cage and screw cover on tight.

READ DIRECTIONS ON NAME PLATE

No. 223—⑥—2 x 3 in. Above

Product of the
Oneida Fountain Supply Company
KANE, PENNSYLVANIA

We positively Guarantee that this article is MECHANICALLY PERFECT, heavily plated with PURE SILVER and STRICTLY [illegible]RNISHED

No. 43

Above •
No. 225—⑥—1¾ x 3¼ in.

No. 227—⑥—2 x 2¾ in.
• Below •

The Maltine Story Hour

The Maltine Minstrel will tell his usual interesting stories for children and parents each Tues. at 5 p. m. Eastern Standard Time over the following stations:

WJZ – NEW YORK
WBZ – BOSTON
WBZA – SPRINGFIELD
WBAL – BALTIMORE
WHAM – ROCHESTER
WLW – CINCINNAT[illegible]
WGAR – CLEVELAN[illegible]
KDKA – PITTSBURG[illegible]
*KYW – CHICAGO
*KFAB – LINCOLN
*KWK – ST. LOUIS
*WREN – KANSAS CI[illegible]
*4 P. M. CENTRAL STANDARD T[illegible]

Featuring Maltine with C[illegible] Liver Oil — CERTIFOOL

Read, Check and Pass On

To	Check

Above
*No. 226—⑥—2 x 3 in.

For Male or Female Hotel and Restaurant Help
Call BRyant 9-1222
Empire State Employment Agency
1235 Sixth Avenue, New York
LOUIS OSTEN, Licensee
Evening & Sundays Call SPring 7-8860

No. 224—⑥—2 x 3 in.

TALLADEGA COLLEGE FOOTBALL SCHEDULE
— 1931 —

DATE	OPPONENT	PLACE
October 10th	ALA. A. & M. INST.	TALLADEGA
October 24th	CLARK UNIVERSITY	TALLADEGA
November 7th	SOUTH CAROLINA STATE	TALLADEGA
November 14th	MOREHOUSE COLLEGE	TALLADEGA (Homecoming)
November 21st	FISK UNIVERSITY	KNOXVILLE, TENN.
November 26th (Thanks'g.)	KNOXVILLE COLLEGE	NASHVILLE, TENN

"Let The Dega Roll"

No. 228—⑥—2 x 3 in.

PAPER—Prices apply to white, gummed labels, perforated in rolls.
For colored papers (Page 32) or 2-color printing, add 25%.
Ungummed labels at 10% below prices listed.
INK—Standard colors: Red, Blue or Black.

PRICES

⑥
5,000.....$1.15 per thousand
10,000..... 1.00 per thousand
25,000..... .90 per thousand

When you want quantity quotations send us as much information as possible.
Handy label holder FREE with 5,000 labels or more.
* Labels starred are printed from cuts, either supplied by you or furnished by us **at cost.**

BELOW U. S. STANDARD
LOW QUALITY BUT NOT ILLEGAL

No. 229—⑥—1¼ x 4 in.

No. 230—⑩—3¼ x 4 in.

CAUTION

KEEP AWAY FROM HEAT

PAPER BOXES AND BOX BOARD SHOULD NOT BE ALLOWED TO BECOME DRIED OUT. STORE AWAY FROM RADIATORS, STEAM PIPES. Etc.

Jer N. J.

SOLDERITE SOLDERING FLUX

IS NON-CORROSIVE

Remove paper as required and apply stick to heated metal—or cause flux to flow upon metal by applying heated soldering iron to the stick.

MANUFACTURED BY

No. 231—⑧—2¼ x 3 in.

THIS DUMMY *for*

_____

_____

Requested by

_____

Date

Size_____

Cover_____

Pages_____

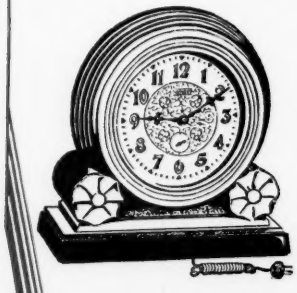
Weight_____

JONES SMITH & CO.
Paper Merchants + Detroit

No. 234—⑩—2½ x 4 in.

from **The Silent Partner**
TWO HUNDRED FIFTH AVENUE, NEW YORK

No. 232—⑧—2¼ x 3½ in.



DEAUVILLE 710
Modern Type
Heavy Sculptor's Duralloy Metal

FINISHES—Silver and Ebony, Jewelled Gold. Luxuriously simple and handsomely modelled is this symphony of circles and discs; particularly effective on desk, mantel or console table.

No. 235—⑧—2¼ x 3¼ in.

THANK YOU

On the date as indicated by the duplicate attached we mailed you the original.

We have not received your reply and will, therefore, appreciate your early advices.

Yours truly,

Aetna Life & Affiliated Companies
175 West Jackson Blvd.
Chicago, Ill.

Phone Wabash 4300

No. 233—⑧—2 x 3½ in.

Labels of these two sizes are particularly well adapted for shipping labels and in addition for guarantee labels and small product labels, as well as for innumerable other uses.

The labels shown on these two pages may be had in any variation of the following suggested sizes:

⑧	⑩
2 x 4	2½ x 4
1½ x 5	2 x 5
2¼ x 3½	2½ x 3½
2½ x 3	1½ x 6
2¾ x 3	3 x 3
2 x 3½	4½ x 2
1¼ x 4½	
6 x 1¼	

PAPER—Prices apply to white, gummed labels, perforated in rolls. For colored papers (Page 32) or 2-color printing add 25%. Ungummed labels at 10% below prices listed.

INK—Standard colors: Red, Blue, Black or Green.

© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM

No. 236—⑤—2 x 4 in.

FROM

CONTINENTAL MUSIC COMPANY

62 COOPER SQUARE • NEW YORK CITY

POSTMASTER • RETURN POSTAGE GUARANTEED

*for*_____

_____

No. 239—⑩—2½ x 4 in.

ONE POUND NET WEIGHT

SAPORITO

BRAND

◆

Pure

COCOA

Sweet

◆

PACKED BY

SAPORITO PRODUCTS CO.

NEW YORK, N. Y.

WE DESIGN AND BUILD TRUCK BODIES FOR EVERY INDUSTRIAL NEED

GENEVA BODY CORPORATION, - GENEVA, NEW YORK

No. 237—⑩—2¾ x 3¾ in.

CONTENTS: MERCHANDISE.

Postmaster: This parcel may be opened for postal inspection if necessary.

From Lehn & Fink, Inc.

250 Park Avenue

New York, N. Y.

RETURN POSTAGE GUARANTEED

For

No. 240—⑩—2¾ x 3¼ in.

◆ FROM ◆

ST. LOUIS GLASS & QUEENSWARE CO.

China and Glassware

1121-1125 OLIVE STREET ST. LOUIS, MO.

For

_____

_____

No. 238—⑧—2¼ x 3½ in.

PRICES

⑧	5,000 . . .	$1.35 per thousand
	10,000 . . .	1.20 per thousand
	25,000 . . .	1.05 per thousand
⑩	5,000 . . .	$1.50 per thousand
	10,000 . . .	1.30 per thousand
	25,000 . . .	1.15 per thousand

Ever Ready Holder FREE with order for 5,000 labels or more.

Prices for larger quantities upon request. When you want quantity quotations try to send us as much pertinent information as possible.

* Labels starred are printed from cuts, either supplied by you or furnished by us at cost.

THERE IS NO WASTE WITH EVER READY ROLL LABELS

CONTENTS: MERCHANDISE, 4th CLASS MATTER

OSTMASTER: This parcel may be opened for postal inspection if necessary.

◆ FROM ◆

WESTCHESTER BRIDGE SHOP

31 HEMINWAY AVENUE ◆ ◆ ◆ NEW ROCHELLE, N. Y.

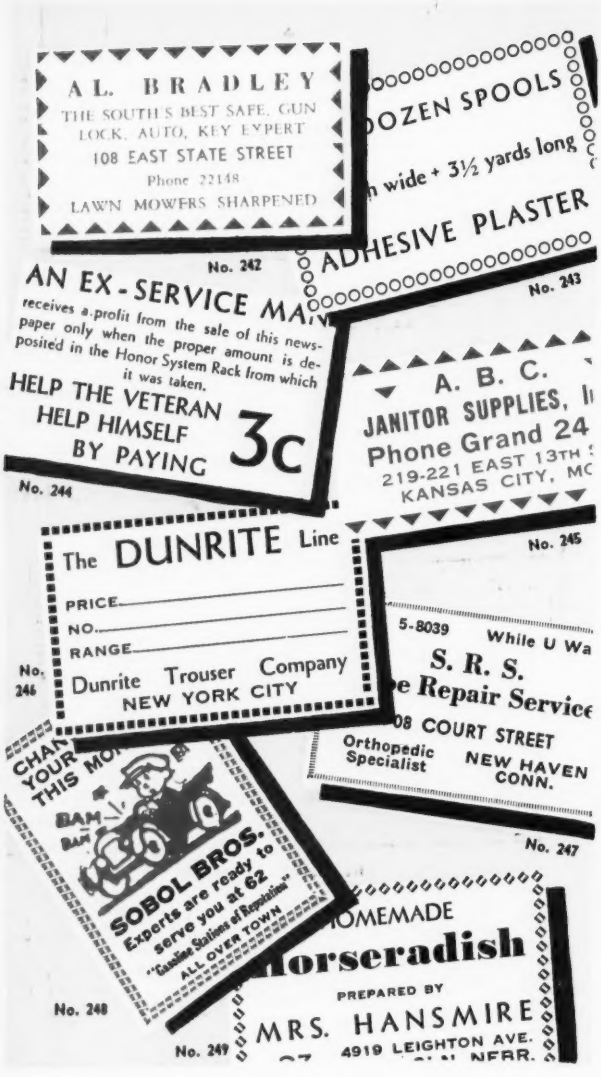
RETURN POSTAGE GUARANTEED

To

No. 241—⑩—2½ x 4 in.

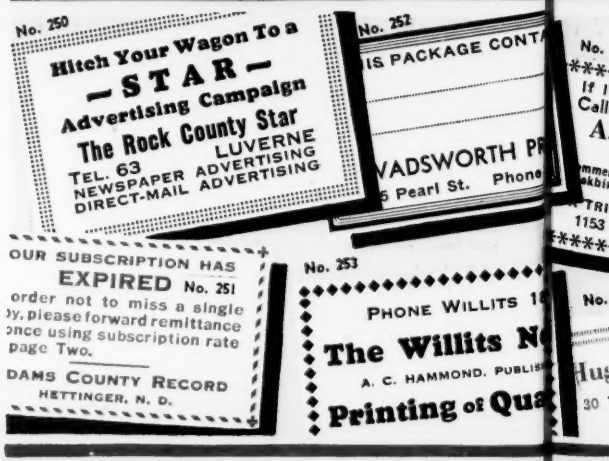
XUM

5000 FREE



This convenient Ever Ready hol
your order for 5000 labels. Ever
offers you 5000 labels, same s
illustrated below, (2" x 1¼"), pr
with any copy or arrangement, g
med, and in perforated rolls—
$3.00, together with this practic
and convenient metal labe
holder.

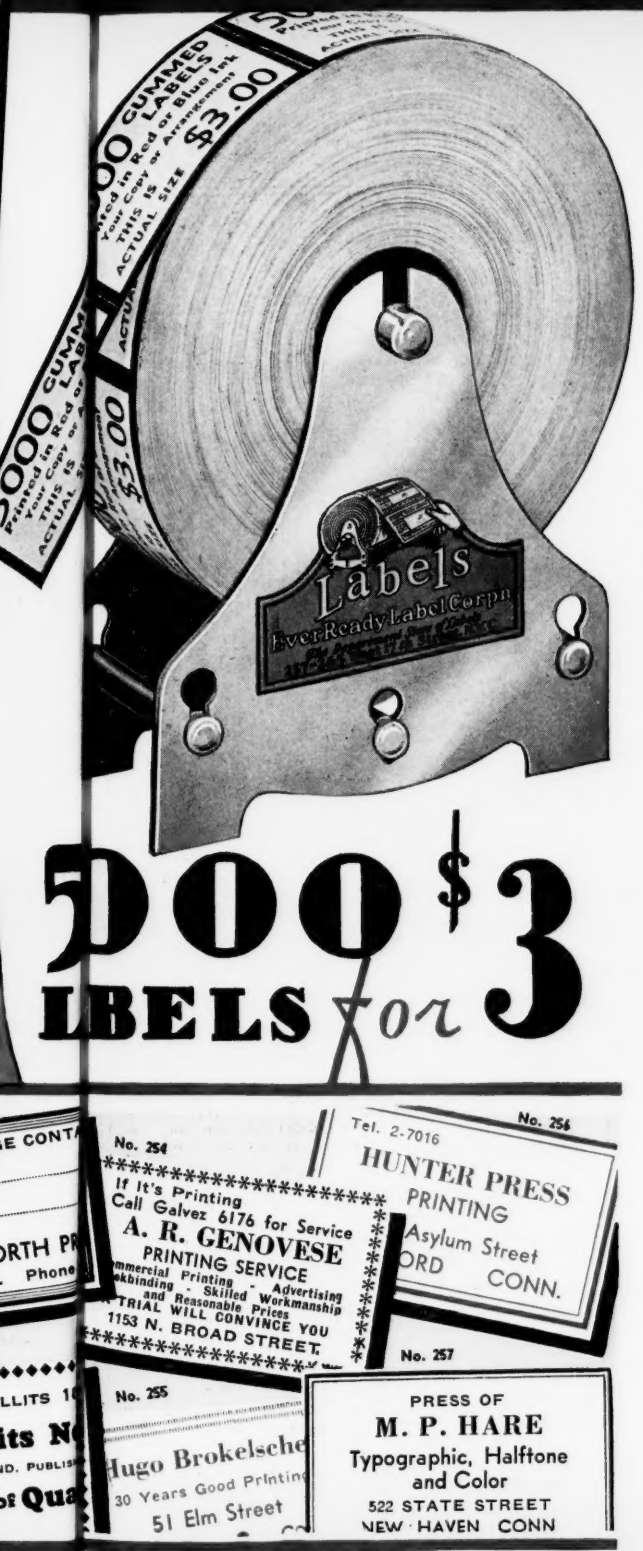
5,000 for $3.00
THIS IS ACTUAL SIZE.
WE WILL PRINT YOUR OWN COPY OR ARRANGEMENT IN RED OR BLUE INK
5,000 GUMMED LABELS 60c. PER M IN ROLL FORM
5000 GUMMED LABELS
Printed in Red or Blue Ink
Your Copy or Arrangement
THIS IS ACTUAL SIZE
$3.00



(Above)—This will give you a good idea of how you can use Ever Ready labels as an advertising medium for your own business. Remember, these labels are printed in red, blue or black, with any copy that you want, for only 60c per thousand in 5M lots. (Size 2" x 1¼").
(At Right)—Here is the most convincing proof that these labels are a remarkable value. Just look at the roll call of printers who use Ever Ready Labels as an advertising medium for themselves. If **printers** can save money by using Ever Ready Labels, surely you can do the same.

© 1932—Ever Ready Corporation,

XUM



5000 LABELS for $3

(Above)—Additional ways of using these 5000 for $3 labels. Isn't it a revelation to see what can be done with small labels like these?

Ever Ready Labels are sold by many printers, stationers and paper merchants throughout the country.

EVER READY—THE BUY WORD FOR LABELS

er Ready poration, New York, N. Y.

Ever Ready Labels

FROM
Bristol-Myers Co.
Manufacturing Chemists
502 Sante Fe Bldg. DALLAS, TEX.

PARCEL POST
CONTENTS — MERCHANDISE

Postmaster:
This parcel may be opened for inspection, if necessary.
RETURN IN 10 DAYS
POSTAGE GUARANTEED

TO

FRAGILE

No. 266—⑫—2¼ x 4¾ in.

No. 267—⑭—3 x 3½ in.

W. A. SHEAFFER PEN CO.
80 FIFTH AVENUE
NEW YORK

THE MAKERS OF
SHEAFFERS
PENS — PENCILS — SKRIPS

RECEIVED NO ANSWER TO
THIS LETTER.

PLEASE JOT DOWN YOUR COMMENTS
ON THIS COPY AND MAIL TODAY

From

Holiday
Penna. Ave. at 17th Street, N. W
WASHINGTON, D. C.

To

"So that all your Holidays will be h

No. 268—⑫—2½ x 4¼ in.

POSTMASTER: This parcel may be opened for postal inspection if necessary.

◆ FROM ◆

S. JACKSON & SON, INC.
P. O. BOX 137 ◆ ◆ NEW ORLEANS, LA.

RETURN AND FORWARDING POSTAGE GUARANTEED

COFFEE SAMPLES

No. 269—⑫—2¾ x 3¾ in.

CO.

SUGGESTED SIZES

⑫ 2 x 6
3 x 4
2½ x 4½
3½ x 3
3 x 3½
5 x 2¼
⑭ 3½ x 4
2½ x 5
6 x 2¼
5½ x 2¼

FROM A.W.L.F 41
The Western Union Telegraph Company
Supply Department
Atlanta, Ga.

TO
The Western Union Telegraph Co.
c/o

ROUTE

WEIGHT

FOR

REQ'N. NO.

No. 270—⑫—3 x 4 in.

EVER READY LABELS—12 and 14 SQUARE INCHES

Labels of these two sizes carry us into the standard shipping and general purpose labels. Note in particular No. 271 used as loan slip by a school library. No. 270 used as supply requisition label by the Western Union Telegraph Co., No. 267 used as correspondence slip by this prominent pen manufacturer, etc.

PAPER—Prices apply to white, gummed labels, perforated in rolls or cut single.
For colored papers or 2-color printing, add 25%.
Ungummed labels 10% below prices listed.

INK—Standard colors: Red, Blue, Black or Green.

⑫	5,000 . . .	$1.70 per thousand
	10,000 . . .	1.50 per thousand
⑭	5,000 . . .	$1.80 per thousand
	10,000 . . .	1.60 per thousand

Handy Label Holder FREE with order for 5,000 labels.

Prices for larger quantities upon request. When you want quantity quotations try to send us as much pertinent information as possible.

* Labels starred are printed from cuts, either supplied by you or furnished by us AT COST.

EVER READY LABELS CAN DELIVER ANY MESSAGE!

© 1932—Ever Ready Label Corporation, New York, N. Y.

No. 271—⑭—3¼ x 3¾ in.

BOARD OF EDUCATION
PALISADES PARK, N. J.

No. _____ ISSUED TO

NAME	DATE	CONDITION

This l
turned w
pupil lea
If the
must be

YOUR ORDER OUR NO.

To

FROM
AAA AMERICAN AUTOMOBILE ASSOCIATI
PENNA. AVE. AT 17TH ST.
WASHINGTON, D. C.

*No. 274—⑪—2½ x 5 in.

MERCHANDISE Fourth Class Mail

Postmaster: This parcel may be opened for postal inspection if necessary.

E·R·SQUIBB & SONS
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858
890 Nickel Plate Drive, Cleveland, O.

If not delivered in 10 days, inform reason for non-delivery.

Return postage guaranteed.

To

*No. 272—⑭—3¼ x 4¼ in.

BIOLOGICAL PRODUCTS MUST BE KEPT IN COOL AND DRY PLACE

AUTO PART

- The house that Shor
- The home of thousa
- A place of complete

AUSTIN HI-W
Phone 940J
TAYLOR, ◆ ◆ ◆ ◆ ◆

No. 275—⑫—2¾ x 4¼ in.

ROM

This parcel may be opened for postal inspection if
Will send return postage if notified of Non-De
BILHUBER-KNOLL CO
64 Order Ave. Jersey City

TO

*No. 273—⑪—3 x 4½ in.

MEDICINAL CHEMICALS

CONTENTS: BOOKS, 4th CLASS MATTER

Postmaster: Return postage guaranteed if not delivered.
This parcel may be opened for postal inspection.

Alexander Eger Publishing Co.
9 SOUTH CLINTON STREET
CHICAGO, ILLINOIS

For

No. 276—⑭—3¼ x 4¼ in.

No. 278—⑮—3 x 5 in.

FROM MYGRANT C
119-121 W. MULBERRY

POSTMASTER:
CONTENTS:
MERCHANDISE,
FOURTH CLASS MAIL.
MAY BE OPENED FOR
POSTAL INSPECTION
IF NECESSARY.

We have promised candy that is absolutely fresh, and will appreciate any effort to rush this package along.

THANK YOU

FRA

FOR

STAR
BRUSHES

CONTENTS: MERCHANDISE. FOURTH CLASS MAIL.
POSTMASTER: This parcel may be opened for postal inspection if necessary.

FROM

Star Brush Manufacturing Co.
Incorporated
LONG ISLAND CITY,
N. Y.
RETURN POSTAGE GUARANTEED

*No. 277—⑮—3 x 5 in.

GIRL SCOUTS, Inc.
670 Lexington Ave.
New York, N. Y.
Return Postage Guaranteed

Sec. 435½ P. L. & R.
U. S. POSTAGE
PAID
New York, N. Y.
Permit 7877

*No. 279—⑮—3 x 5 in.

MERCHANDISE, 4th CLASS
POSTMASTER: This parcel may be opened for postal inspection if necessary.
Return Postage Guaranteed by Sender.

REG. U. S. PAT. OFF.

INDIAN ARCHERY & TOY CORPORATION
210-212-214 N. Fulton Avenue
EVANSVILLE, INDIANA

To_____

*No. 280—⑮—3 x 5 in.

This is your **FAIRY SOAP**
Bath Towel Window Display

READ DIRECTIONS INSIDE

FAIRY

From GOLD DUST CORPORATION, GUTTENBERG, N.J.

*No. 281—⑮—3 x 5 in.

Labels of these two sizes are well adapted for use as shipping labels. Feature your trade mark—it enhances the appearance of your label. We will design a trade mark at surprisingly low cost.

The labels illustrated on these two pages may be had in any variation of copy and in the following sizes:

⑮ 3 x 5
2½ x 6
4 x 3¼
2¾ x 5½
2½ x 5¾
2¾ x 5¼

⑯ 4 x 4
2¾ x 5¾
2-2/3 x 6

PAPER—Prices apply to white, gummed labels, perforated in rolls.

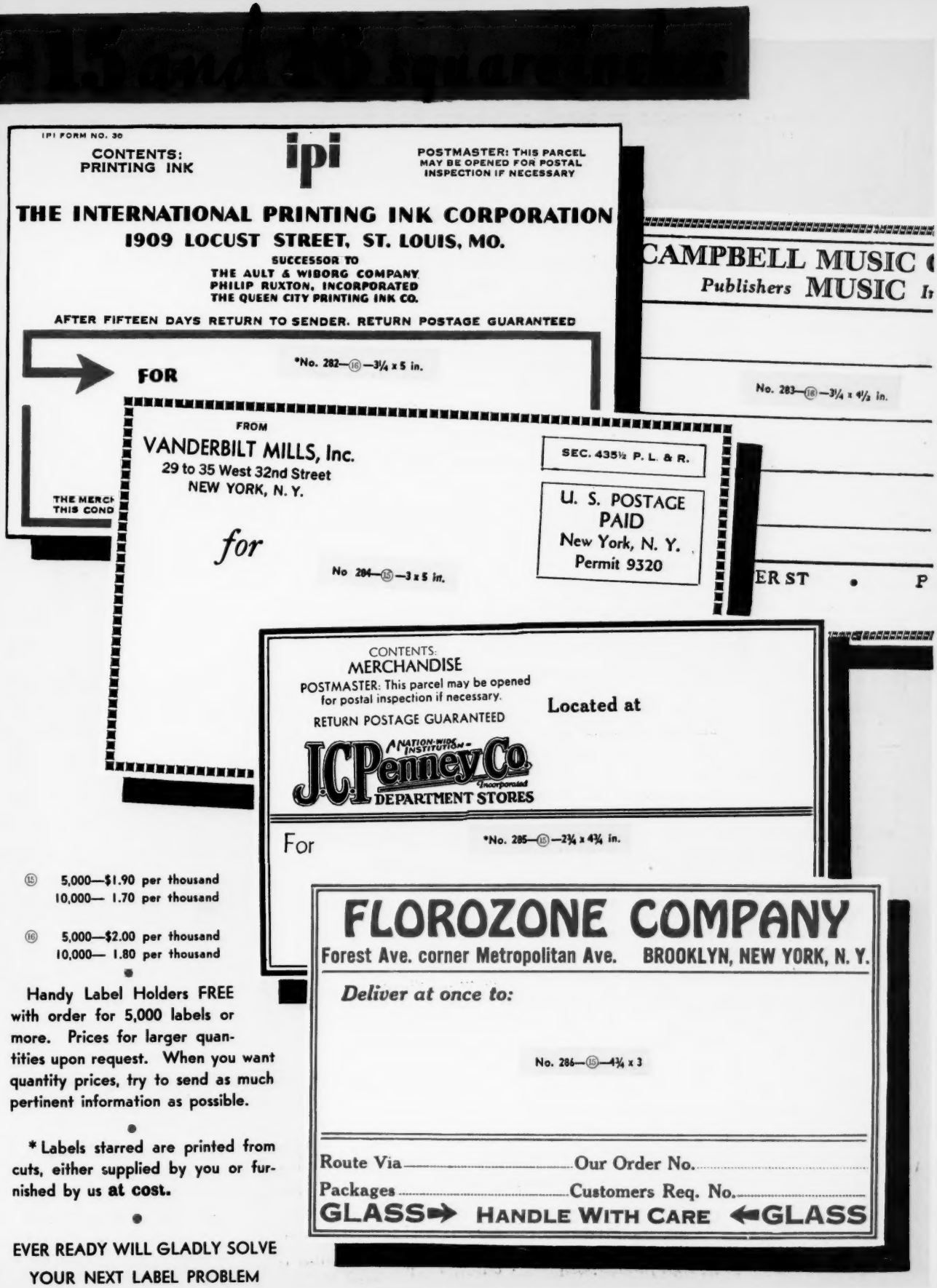
For colored papers or 2-color printing, add 25%.

Ungummed labels at 10% below prices listed.

INK—Standard colors: Red, Blue, Black or Green.

© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM



⑮ 5,000—$1.90 per thousand
10,000— 1.70 per thousand

⑯ 5,000—$2.00 per thousand
10,000— 1.80 per thousand

Handy Label Holders FREE with order for 5,000 labels or more. Prices for larger quantities upon request. When you want quantity prices, try to send as much pertinent information as possible.

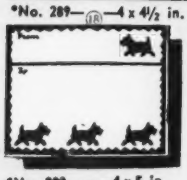
* Labels starred are printed from cuts, either supplied by you or furnished by us **at cost.**

EVER READY WILL GLADLY SOLVE YOUR NEXT LABEL PROBLEM

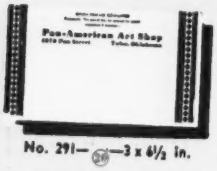
No. 287—(18)—3 x 6 in.

No. 288—(15)—3½ x 5 in.

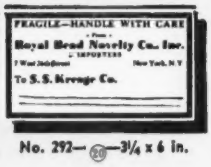
*No. 289—(18)—4 x 4½ in.



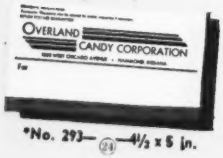
*No. 290—(20)—4 x 5 in.



No. 291—(20)—3 x 6½ in.



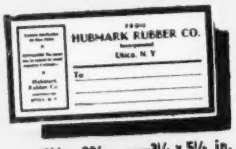
No. 292—(20)—3¼ x 6 in.



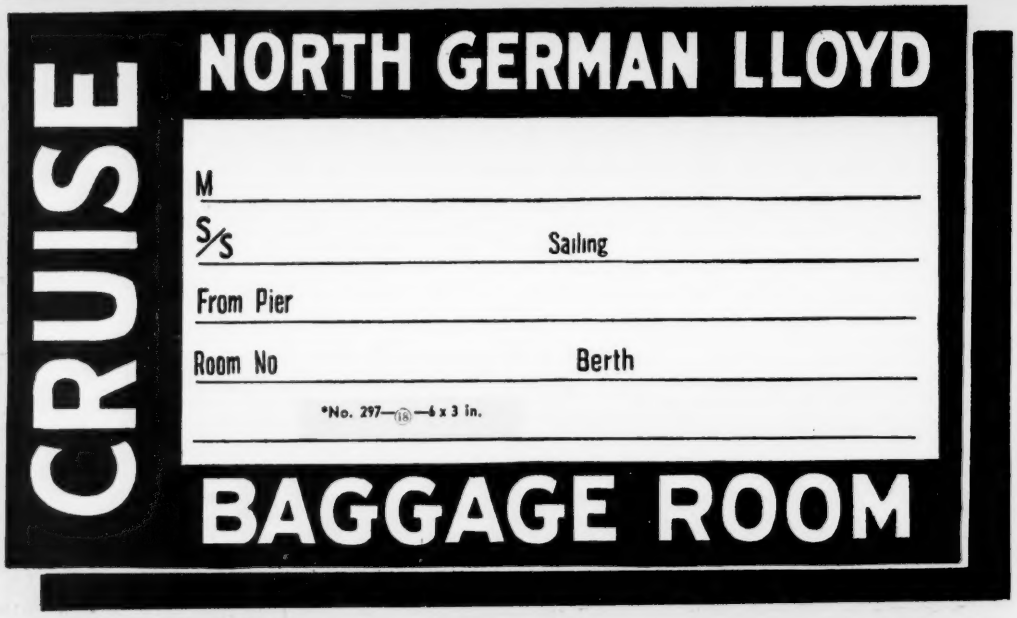
*No. 293—(24)—4½ x 5 in.

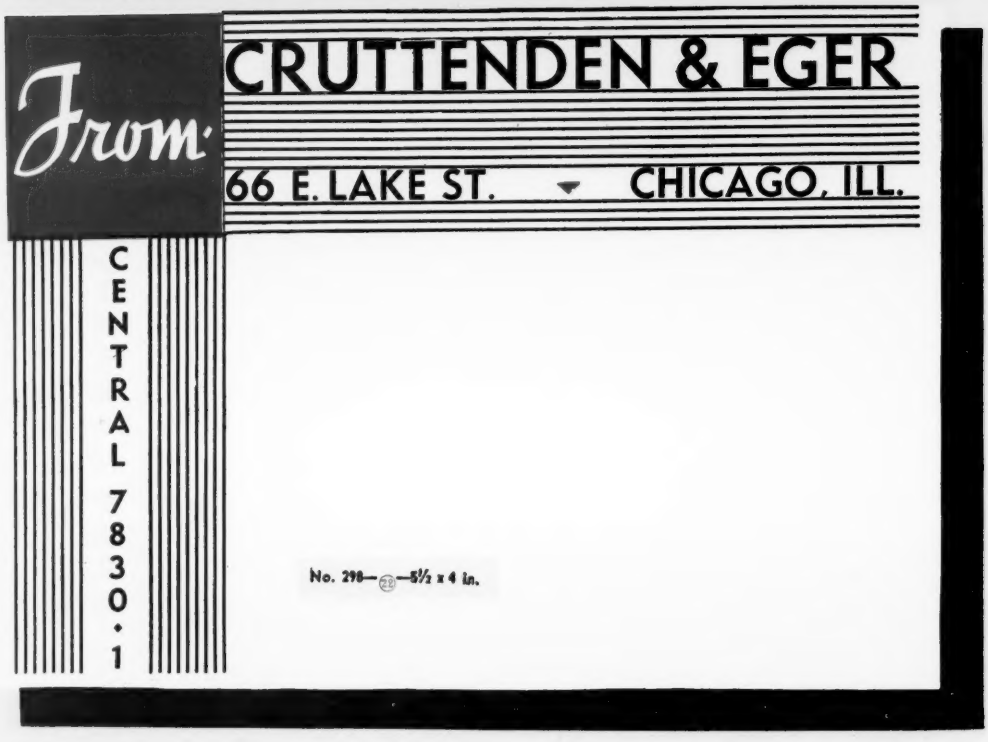
*No. 294—(24)—3¼ x 7 in.

No. 295—(24)—4½ x 5 in.



*No. 296—(18)—3¼ x 5½ in.





PRICES

The labels mentioned on these two pages may be had in any of the suggested sizes illustrated by the labels shown in reduced sizes at the side.

PAPER—Prices apply to white, gummed labels, perforated in rolls or cut single.
For colored papers or 2-color printing—add 15% on these sizes.
Ungummed labels at 10% below prices listed.

INK—Standard colors: Red, Blue, Black or Green.

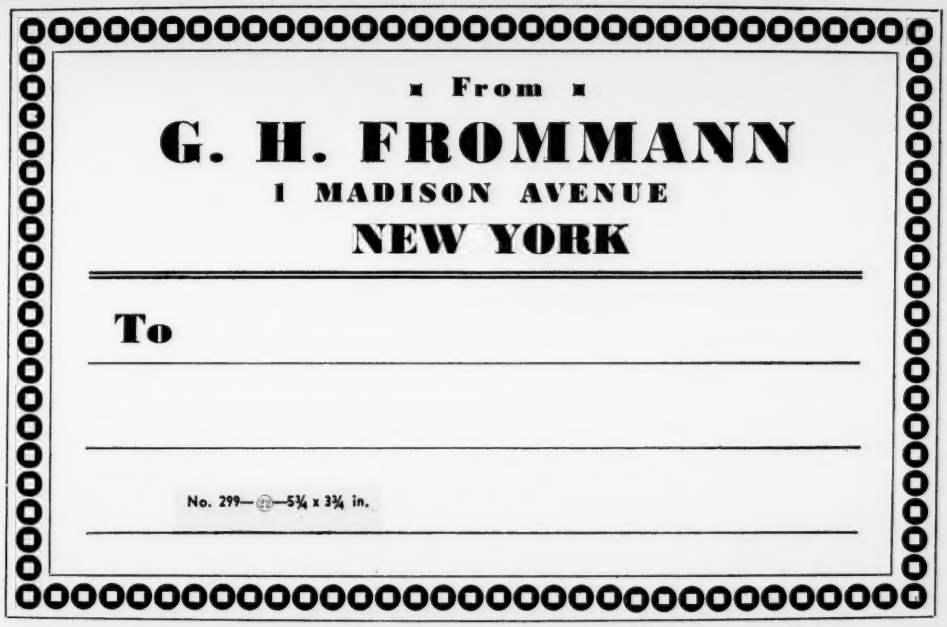
(18) 5,000—$2.20 per thousand
10,000— 1.85 per thousand

(20) 5,000—$2.40 per thousand
10,000— 2.00 per thousand

Please... See Page 32 (Ever Ready Guarantee)
Page 16 (Post Office Approval of Ever Ready Labels)

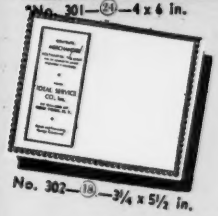
© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM

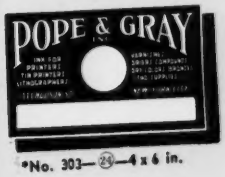


No. 299—(22)—5¾ x 3¾ in.

*No. 301—(24)—4 x 6 in.

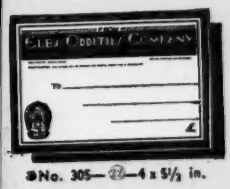


No. 302—(18)—3¼ x 5½ in.

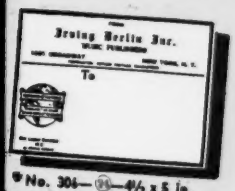


*No. 303—(24)—4 x 6 in.

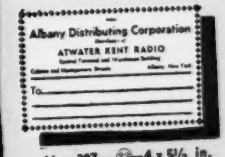
No. 304—(24)—4 x 6 in.



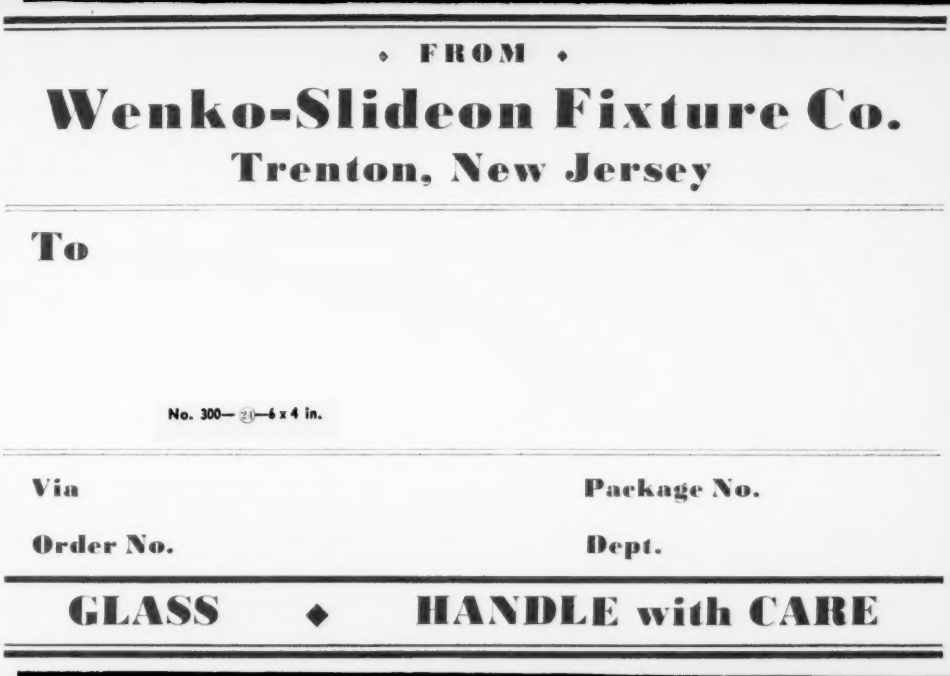
*No. 305—(22)—4 x 5½ in.



*No. 306—(24)—4½ x 5 in.



No. 307—(22)—4 x 5½ in.



(22) 5,000—$2.55 per thousand
10,000— 2.10 per thousand

(24) 5,000—$2.70 per thousand
10,000— 2.40 per thousand

HANDY LABEL HOLDER FREE WITH ORDER FOR 5,000 LABELS OR MORE
Prices for larger quantities upon request. When you want quantity quotations try to send as much information as possible.

* Labels starred are printed from cuts, either supplied by you or furnished by us at cost.

YOUR LABEL PROBLEMS ARE OURS TO SOLVE

*No. 309—(5)—3 x 8 in.

*No. 308—(24)—3½ x 6 in.

XUM

Ever Ready

Guarantees its Products

....here is the reason why!

Just a Word About Ever Ready Gummed Specialties

Every business has, in addition to its regular products—one or more by-products. Ever Ready produces the following specialties to meet **your** requirements:

1. **Glassine** or **transparent papers** can be made up as labels and stickers, bankers seals and for innumerable other uses.
2. **Strip-Gummed paper** can be fabricated into gummed end labels for tipping on certain forms or banding on certain articles and many other uses too.
3. **Gummed papers in varied colors and Boncraft** (Extra brilliant colors may be used on any label requirement in place of white at slight additional cost.) Colored labels have unusual advantage in many specific instances. Colors available; red, yellow, blue, green, orange, pink, canary and brown.
4. **Silver and Gold Papers** give a rich appearance to packaged merchandise. When used for labels, stickers or seals, gold or silver papers lend that value "tone" so important as a vehicle to the success of your package or any worth while message you deliver. Ask for package G. S. with samples and proofs.
5. **Gummed Cloth and Hollands** will be gladly furnished by Ever Ready. Tell us your needs. Prices fluctuate—write for special quotations.

Submit any requirement on any gummed product—above mentioned or otherwise. We are confident we can quote interesting prices and be of service.

Ever Ready gives you an UNQUALIFIED guarantee — because it has developed a UNIVERSAL gummed paper, one that combines all the good features of DEXTRINE and FISH glue. DEXTRINE glue adheres to smooth surfaces, while FISH glue is more suited to the rougher surfaces.

This remarkable dual-quality special gumming permits Ever Ready labels to stick to anything with the exception of tin, iron, brass, copper, etc., and moisture-proof cellophane. These articles require special gumming for which we'll gladly submit suitable samples. Ever Ready has spent considerable time and money to develop its gummed papers for you—so that we could offer labels that will bear the Ever Ready guarantee — labels you can rely upon to STICK, do their work well, and satisfy you thoroughly!

Here's the Every Ready Guarantee!

You—the purchaser of Ever Ready Labels, are protected by this brief, forceful guarantee.

Ever Ready guarantees to stand back of every sale, until you, the customer are completely satisfied! Your money is of service to us only to the extent that our product is of service to you!

The Ever Ready Label Corporation, for your interest and protection, is privileged to refer you to the County Trust Company of New York. You will find us listed and rated in both Dun's and Bradstreet's.

MEMBERS OF:
Rotary Club of New York
Advertising Club of New York
American Management Association
Better Business Bureau of New York
Merchant's Association of New York
Direct Mail Advertising Association

© 1932 by Ever Ready Label Corporation, New York, N. Y.

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Ever Ready Labels Okayed by LABEL USERS!

THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY
157 CHURCH STREET
NEW HAVEN, CONNECTICUT
January 9, 1931

Ever Ready Label Corporation
257 - W. 17th Street
New York, New York

Attention: Miss Janet E. Gibbs

Gentlemen:

This is to acknowledge receipt of your letter of yesterday regarding the shipments of labels, and to tell you that both packages arrived promptly this morning. Many thanks for the "Ever-ready" service, which we greatly appreciate. We were thus able to satisfy our customer and, incidentally, to convince ourselves that your promises of good service and co-operation are not mere idle words.

We hope to be able to send additional orders in the not-distant future, and will see to it that a reasonable length of time will be given you in which to produce them.

Again -- many thanks.

Yours very truly,

M. S. Keeney
Copy Supervisor

MSK/J

PITNEY-BOWES POSTAGE METER CO.
STAMFORD, CONN., U. S. A.
January 18, 1932.

Ever Ready Label Corporation,
257-265 West 17th Street,
New York, N. Y.

Gentlemen:

Having just contracted for our annual requirements in the matter of the special gummed tape that you manufacture for us, we would like to take the occasion to express our hearty appreciation of the service you have rendered, particularly as regards cooperating with us in developing materials best suited to our individual requirements.

Aside from the above contract, you are furnishing us with ship... labels used by our district offices in all parts of the country as well as in our Home Office at Stamford, and again your service has been excellent.

We would like you to know that your ability and desire to render service has always materially influenced our negotiations with you.

Cordially yours,

PITNEY-BOWES POSTAGE METER CO.

THE REUBEN H DONNELLEY CORPORATION
DIRECTORY PUBLISHERS
CHICAGO NEW YORK CINCINNATI
79 MADISON AVENUE NEW YORK
Telephone Lexington 2-7000
NEW ADDRESS
305 EAST 45TH STREET

January 19, 1932

Ever-Ready Label Corp.
257-265 West 17th Street
New York, N. Y.

Attention of Mr. Sidney Hollander, President

Gentlemen:

We have just moved our offices from 79 Madison Avenue to 305 East 45th Street, and we are in need of a new supply of mailing labels.

We are very particular about our letterheads, labels, etc., but we are pleased with the label that we are using at the present time - the one with our name on the right hand side and the picture of Donnelley's Red Book in the left hand corner.

We would like to receive these labels at the earliest possible moment. However, in making up the new address, please do not disturb the general layout of our present label. You will receive a confirming order in the next mail.

I might mention that during the past few months several people have asked me who printed our labels and I was glad to refer them to the Ever-Ready Label Corporation.

Yours very truly,

THE REUBEN H. DONNELLEY CORPORATION

HEALTH PRODUCTS CORPORATION
113 NORTH 13TH STREET
NEWARK, N. J.
January 11, 1932

Ever ready Label Corp.,
257 West 17th Street,
New York City.

My dear Mr. Hollaender:

Attached hereto please find our order for 100,000 Ever Ready Labels which after having used your labels continuously for six years, would indicate complete satisfaction.

We find them well made and their use represents true economy.

Yours very truly,

N. E. Kunsman
Purchasing Agent

THE EGRY REGISTER COMPANY
DAYTON, OHIO, U.S.A.
November 18, 1931.

Ever Ready Label Corp.,
257-265 West 17th St.,
New York, N. Y.

Gentlemen:

Our business relation with your company has been very pleasant.

We are particularly impressed with your promptness of handling inquiries, the personal interest you display in working with your customer, the speed you put back of details in handling the order submitted to you and last but most important of all the uniform quality and decided attractiveness of your product.

Yours very truly,

THE EGRY REGISTER COMPANY

Joe Lowe Corporation
Importers and Manufacturers of
Food Products
January 11, 1932

Ever Ready Label Co.
257 W. 17th St.,
New York City, N. Y.

Gentlemen:

May we take this opportunity of congratulating you on your excellent execution of our recent order for special Gold Shoe Tapes. Not only have you followed out our ideas perfectly giving us exactly the effect required but in meeting the rather unusual demand we made on you for delivery we feel that you have done more above us the kind of service that we have come to expect of your organization thru our many years of pleasant business relationship.

We feel confident this type of tape will prove a very big item in the Spring February and hope to be able to pass you considerable

---

VICK CHEMICAL COMPANY
MANUFACTURING CHEMISTS
NEW YORK PHILADELPHIA
Jan. 12, 1932.

Ever Ready Label Corporation,
257 West 17th St.,
New York, N. Y.

Attn: Mr. S. Hollaender.

Dear Mr. Hollaender:

We feel that the best way we can answer yours of the 6th as to our feeling towards you, that is whether your service meets our approval, etc., is to send you another order.

We want 200,000 of our Sample Mailing Labels like the specimen attached. Don't get this confused with the last order, for this is the same design as we had on the first lot of 250,000 you made for us. We have found that our original carton wasn't strong enough to stand the abuse it received in the mail and have had to get a different style outer cover.

Please enter this order at once and let us know how soon you can make shipment. We would like to get 25,000 of these by express and the balance by freight.

Upon receipt of advice as to how soon we can expect these and what the price will be, regular order will be mailed.

Very truly yours,
VICK CHEMICAL COMPANY,
C. 9 Gale
Vice President

CGT:O
cmal.

LYNN LABEL CORP. No. 1 DATE 1-13-32 ORDERED BY ... CUSTOMER'S ORDER NO. 4473 FILE

VICKS Nose & Throat Drops | VICKS VapoRub | VICKS Vaticks Cough Drops

---

Mailing Machines Co.
Everett Mass.
January 11, 19...

Ever Ready Label Corp.,
257-265 West 17th Street.
New York, N. Y.

Att: Mr. S. Hollaender

Gentlemen:

Several years have passed since you first supplied us with labels and stickers in rolls. Several million of the latter have been used in demonstrating our Stamp Affixers, and by users of those machines for sealing folded mailing pieces.

Your product has met with the approval of ourselves, our agents, and the users of our machines, and the service you have rendered in connection with the supplying of these items has been very satisfactory.

Very truly yours,
STANDARD MAILING MACHINES CO...

B.Barnes/L

Duplicators - Envelope Sealers - Stamp Affixers - Post...

LYNN LABEL CORP. No. ... DATE ... ORDERED BY ... CUSTOMER'S ORDER NO. ... FILE

THE PATERSON PARCHMENT PAPER CO.
MANUFACTURERS OF
GENUINE VEGETABLE PARCHMENT
PASSAIC, NEW JERSEY
Jan. 12, 1932.

Ever Ready Label Corp.,
257 W. 17th St.,
New York, N. Y.

Attention of Mr. S. Hollander.

Gentlemen:

After spending several years of floundering around trying to find a label that would suit our various requirements, we were recommended to you people in 1925 and have been doing satisfactory business with you ever since.

We have never had any reason for questioning the service which you have given us as it has always been satisfactory and very prompt.

Very truly yours,
PATERSON PARCHMENT PAPER COMPANY.
G. Leonhard
Purchasing Agent.

G. H. Leonhard
HLM.

LYNN LABEL CORP. No. ... DATE ... ORDERED BY ... CUSTOMER'S ORDER NO. ... FILE

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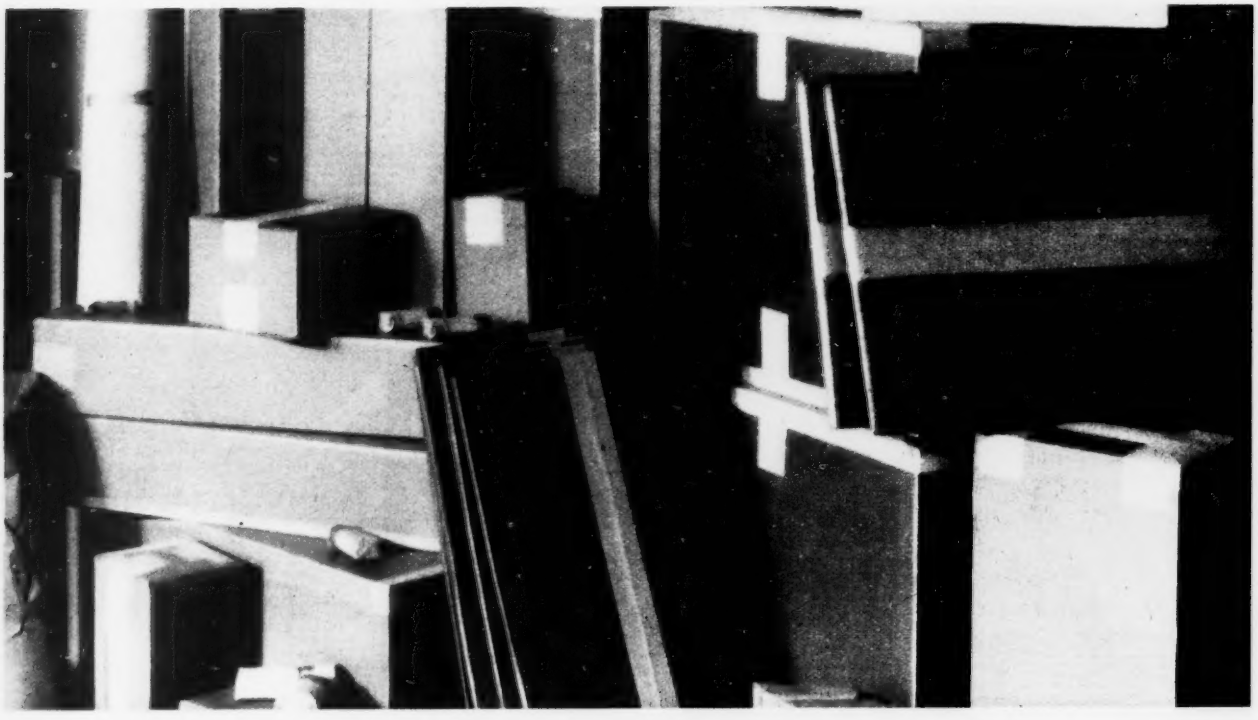
Ever Ready SHIPPING ROOM SUPPLIES



GUMMED SEALING TAPE

Users of corrugated and solid fibre boxes for making shipments require the best and most economical sealing methods, and gummed tape fills that bill.

Laboratory tests have many times proven that a taped container is safer than a container closed by other methods. Tape not only holds the flaps in place, but reinforces the package on the horizontal creases and corners.

"Concealed thefts" and pilferage are discouraged by the use of **printed** gummed tape because tampering with the container is easily detected.

Gummed taping is a rapid method of sealing because the tape sets quickly and if properly moistened, adheres firmly. It will help solve the rush hour problem in your shipping room.

- You will find the cost of taping equipment less than the cost of equipment for any other method of sealing.
- Ever Ready Gummed Tape will protect the contents of your packages from dust, dirt, odors, and moisture; also prevent leakage of contents.
- Ever Ready Gummed Tape printed with your advertising offers a valuable advertising medium at no appreciable extra expense.
- Ever Ready Gummed Tape will not damage the contents of your containers in its application. It is clean and sanitary — contains no acids that might injure goods or sealer's hands.
- Ever Ready Gummed Tape is most reasonable in cost, both as to the tape and its application. It saves labor, saves freight, saves waste.
- Ever Ready Gummed Tape makes a smoother, neater, more business-like package, which is an asset to the shipper.
- Ever Ready Gummed Tape is adapted to all sizes of containers and also makes a neat, convenient medium for closing packages and bundles of all kinds.

KRAFT: The Kraft used in the manufacture of Ever Ready Tape is made from 100% Pure Sulphate Pulp. This pulp is a long fibred (Spruce) pulp. The long fibres give it great toughness, yet it is unusually pliable. This allows it to be easily folded over the corners of containers. It is especially prepared for gumming.

The Kraft is made by what is called a slow cooked process and is run through beaters which leaves the fibres long and preserves the strength. The resulting sheet is soft, pliable and strong.

GUMMING: The glue used in the manufacture of Ever Ready Tape, is scientifically prepared by men who are experts in their line.

1. Only a select grade of pure animal glue is used.
2. No decomposed or renovated glue is added to cheapen the mix.
3. No dextrine or cheap filler is added.
4. **It has no disagreeable odor.**
5. It is cooked and prepared so as to give that "quick grab" action which means immediate and permanent sealing.

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PRINTED SEALING TAPE MAKES FAVORABLE IMPRESSION

Gummed Tape (35 lb.) for use as 310, 311, 312 illustrated, repeats your copy or imprint every 4½ inches, making approximately three ads to 12" of tape.

We estimate that 4½ inches of tape is sufficient to seal the average small package, giving a complete advertisement on each package.

60 lb. gummed tape carries two ads to the foot.

We have tried in this limited space to give you a quick picture of gummed tape and its uses. Many special problems come up and your individual requirements may demand some special consideration that we'll be happy to give.

Please write us about any problem that effects your shipping.

USE OF CUTS

The price of all tape is based upon printing from type, or cuts furnished by you. We'll be glad to develop drawings and plates at cost, and we'll assist you in creating any designs or ideas.

Table of Prices — EVER READY — Printed Gummed Sealing Tape In One Color— Blue or Red

	16 Rolls	25 Rolls	50 Rolls	100 Rolls
*1" Width	$.60	$.48	$.40	$.32
*1¼" "	.70	.58	.48	.40
*1½" "	.80	.68	.54	.44
†2" "	1.20	.85	.65	.56
†3" "	1.63	1.20	.87	.80

* 35 lb. quoted 500 Ft. rolls gummed side out.
† 60 lb. Tape quoted 600 Ft. rolls gummed side in.

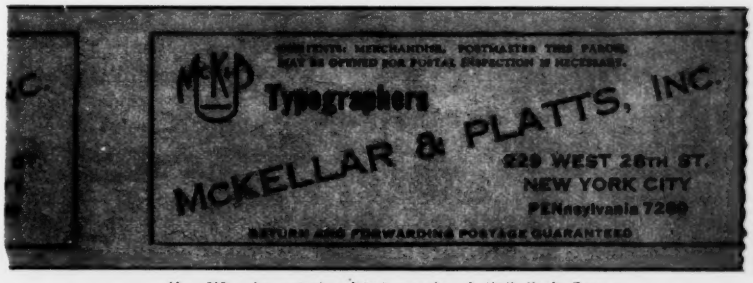
For two-color printing add 25% to above prices.

White, Grey, Orange, Red and Green Kraft can be obtained in quantities of 25 rolls, printed with your copy. Add 10c per roll on 1" width and additional in proportion for other widths.

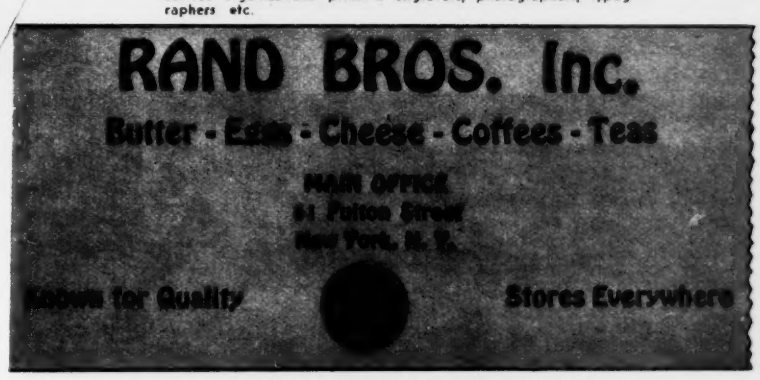
All prices listed per roll basis F. O. B. New York.

No. 310—An actual printed sample of Kraft tape—suggests sealing of local delivery parcels for neighborhood retail stores—drugs, groceries, bakeries, etc.

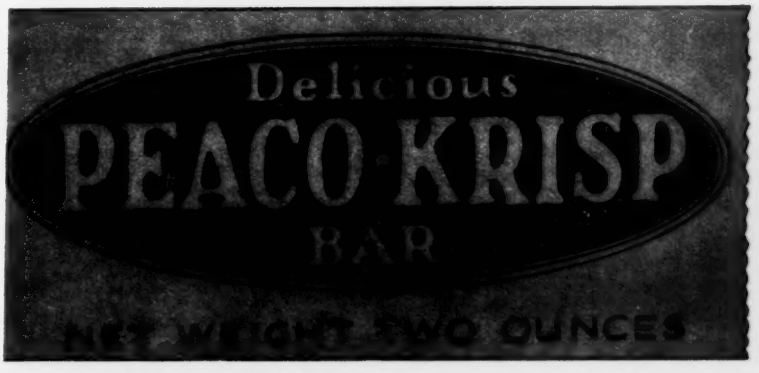
No. 311—Printed sample of 1¼" Kraft Tape—Suggests the use of tape for small parcels sent out by shippers who pack light yet fairly compact articles.



No 312 — An actual printed sample of 1½" Kraft Tape — Suggest the sealing of delivery parcels and envelopes by local service organizations—printers engravers, photographers, typographers etc.



No. 313 - No. 314 — Two printed samples of 2" Kraft Tape — Probably best suited for sealing comparatively large cartons. 3" printed Kraft Tape (also available) is very similar in usage, being best adapted for the largest and heaviest cartons.



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SPECIAL
Combination Offer!

Free Package Sealer

with your order for

16 rolls 1" printed tape and 5 rolls 1" plain tape
We will send you a Seal Rite Sealing Machine FREE
upon receipt of your order

Wrap your outgoing bundles neatly with the aid of printed gummed tape.

Remember, you secure in addition the cheapest and best advertising by this method—your name and address appearing on every package you send out.

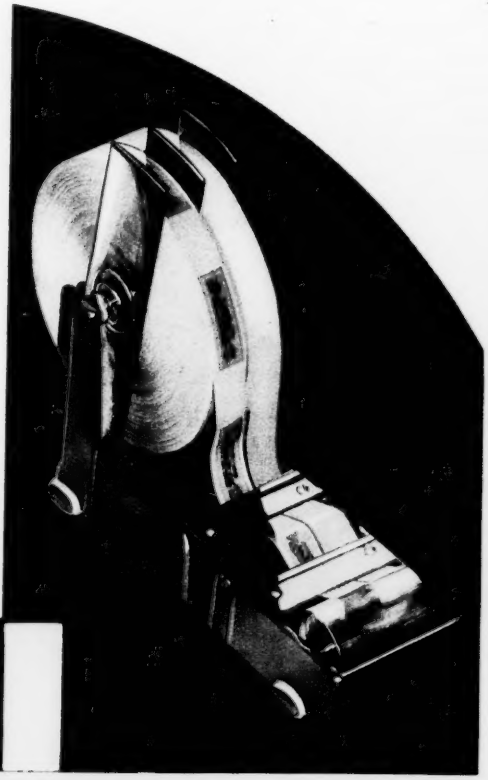
16 rolls 1-inch width 35-lb. Ever Ready gummed tape (6000 inches, approximately 1,300 ads in every roll). Printed with your business advertisement in either blue or red ink, 5 rolls 1" plain tape and one Seal Rite Sealing Machine ($5.00 value) — all for $11.75. Regular value complete $16.00 Can you beat it?

Complete Combination

$11.75

Cash With Order!

Catalog No. 315

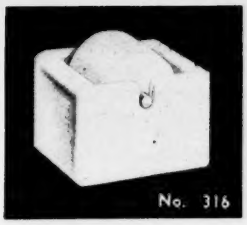


FREE with your order for 21 rolls of gummed tape
SEAL RITE PACKAGE SEALER

© 1932—Ever Ready Label Corporation, New York, N. Y.

Label Moistening Appliances

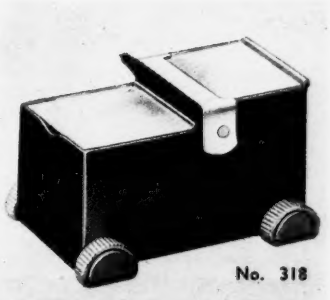
No. 316—The Ever Ready "Junior" Label Moistener is especially adapted for general light duty office use.
Price, each ..... $.50
(FREE with $6.00 Roll Label order)

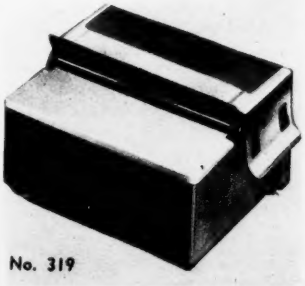

No. 316

No. 317

No. 317—Ever Ready "Senior" Label Moisteners are the sanitary way to moisten labels, etc. Made of glazed white porcelain, with nickel plated polished metal parts, nothing to wear out or break. They are clean, look clean, stay clean, and most satisfactory for general label use.
Price, each $1.50
(FREE with $15.00 Roll Label order)

No. 318—Hummer "Office Boy" Label Moistener. The OFFICE BOY will moisten your labels without fuss or muss. No revolving mechanism to splash the water. The OFFICE BOY is like the tongue itself. Quick removable brush and lid makes this model extremely easy to keep clean. Made of Aluminum. Moistening width 1½"
Price, each $2.00
(Refer to Special Combination Offer on Page 39.)


No. 318


No. 319

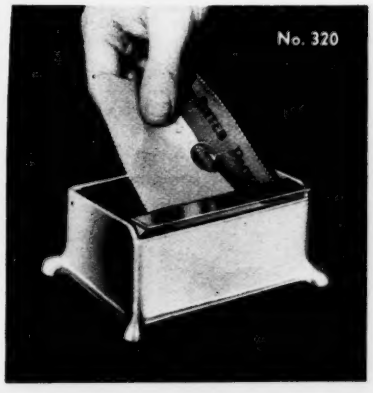
No. 319—Hummer "LABELER." There should be a LABELER wherever labels are moistened. Clean, quick, efficient. The stationary brush spreads the water evenly on the gum without splash. An illegible address on a label, due to improper moistening, may mean the loss of a good customer. Made of Aluminum. Moistening width 3½".
Price, each $4.00

No. 319A—Moistening width 5½"
Price, each $6.00

No. 319B—Moistening width 7½"
Price, each $8.00

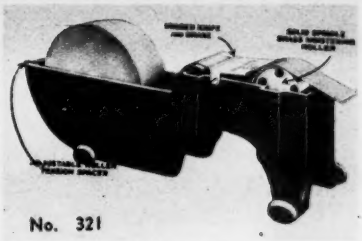
No. 320—"The Counterboy Labelor" is one of the few machines that insures proper moistening. It moistens gummed labels evenly, and with exactly the right amount of moisture to make them sticky without being skiddy. The label clings to the package.

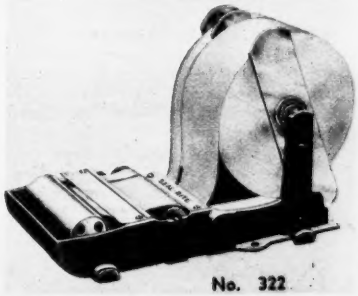
Automatic Moistening eliminates the human factor. Rush hour carelessness cannot lower its efficiency. May be used with either roll or flat labels. Moistening width 4 inches.
Price, each $4.00


No. 320

Tape Moistening Appliances

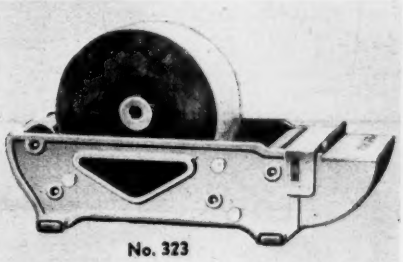
No. 321 — "Seal - Rite" Moistener and Sealer, No. 500. Made specially for use with the 500 Foot Roll. Fitted with adjustable spring cradle roll spacers, assuring the accurate moistening and cutting of gummed tape rolls, any size from ½" to 1½" in width and up to 6" diameter. (500 ft. 35 lb. weight). The patented hinged cutter (acting as a brake during the cutting operation) makes it possible to use the roll to the last inch of tape. Made of grey iron, steel and brass. Finished in green enamel. Shipping weight 5 lbs.
Price, each $3.50
(Refer to Special Combination Offer on Page 39)


No. 321


No. 322

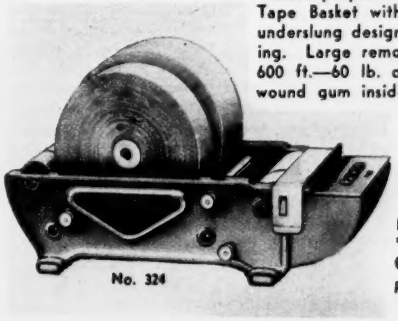
No. 322 — "Seal - Rite" Moistener and Sealer No. 3. For Counter and Desk use. Moistens and cuts tape to any desired length. Holds one or two rolls of gummed tape, any size up to a total width of 2 inches and a diameter of 8 inches (800 ft.—35 lb. weight, or 600 ft.—60 lb. weight) can be operated on this machine. Made of grey iron, steel and brass. Finished in grey enamel.
Price, each $5.00
(Refer to Special Combination Offer on Page 39)

No. 323—"Packer" Moistener and Sealer. For small size 500 foot rolls of 35 lb. tape, wound gum outside, not wider than 1½". Where only a few packages and small cartons are sealed up daily its use is advised. This Packer is one of the best low price tape moisteners using the patented GUIDE-PLATE-AND-BRUSH moistening unit you can buy. It is compact and of low, underslung construction that won't upset easily. The large removable water tank and brush makes cleaning easy. No spindles, brackets, or other tension devices to bother with when loading. Simply lay the roll in the tape basket.
Price, each $5.00
(Refer to Special Combination Offer on Page 39)


No. 323

No. 324—"Packer" Moistener and Sealer. The only moderately priced shipping room tape moistener without tape spindle, tension spring, bolts or nuts. Patented BRUSH-AND-GUIDE-PLATE unit insures proper moistening. The Double Tape Basket with roller bearings, gives underslung design which prevents creeping. Large removable water tank. For 600 ft.—60 lb. or 800 ft.—35 lb. tape wound gum inside.

No. 324A
3" Capacity
Price, each $7.50
No. 324B
4" Capacity
Price, each $10.00
*(Refer to Special Combination Offer on page 39.)


No. 324

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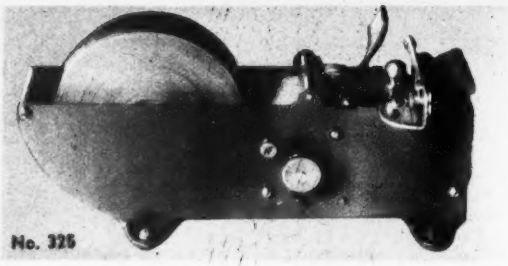
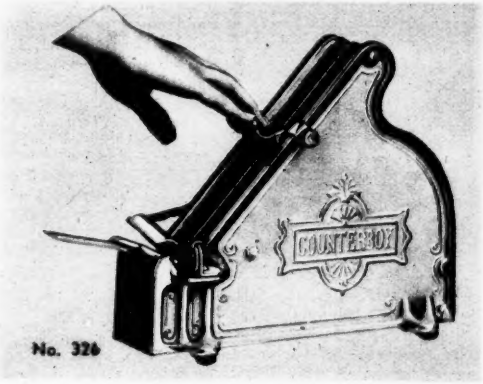
Gummed Tape Sealing Machines


No. 325

No. 325—"MODEL X COUNTERBOY" SEALING MACHINE. Takes 500 foot rolls of 35 lb. gummed tape in widths from ¾" to 1½". Automatically measures lengths of the strips.

There are no moving parts to moistening unit. The patented Auto-Brush Moistening Unit makes the Model X Counterboy the one package sealer which does not splash water; does not soil the fingers; and does not give damp, messy parcels. This patented feature has for the first time enabled salespeople in exclusive shops to tape packages of delicate silk fabrics. Their customers get dry parcels. The sales-person's fingers remain clean.

Price, each $16.00



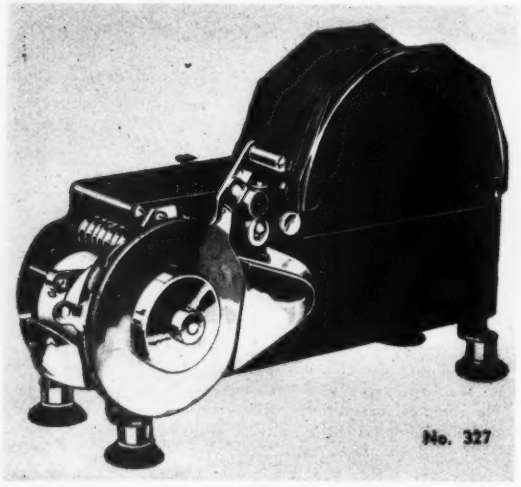
No. 326

No. 326—"PACKAGE COUNTERBOY" SEALING MACHINE—for factories, department stores and wholesale shippers. Seals smaller cartons and paper packages with 1", 1¼" or 1½" tape. Built for hard, rough use which department stores and factories give a taping machine. Won't splash water. Only two moving parts to "Counterboy." No gears, rollers, cams, etc. Has half as many parts as other sealers, but those parts are made solid and right. Single tape loading. Just drop roll in. When the Counterboy shear cuts the tape it "stays cut." The water tank will hold the contents of three ordinary tanks. No unscrewing to get it out for refilling.

However, the thing which caused many of the greatest department stores in America to standardize entirely on this "Package Counterboy" is the patented Counterboy Moistening Couple. It is the **only** non-moving device through which a strip of thin tape can be pushed and come out smoothly, perfectly, automatically moistened. It is the only tape moistening device that keeps the fingers clean and free from gum. The Package Counterboy is infallible.

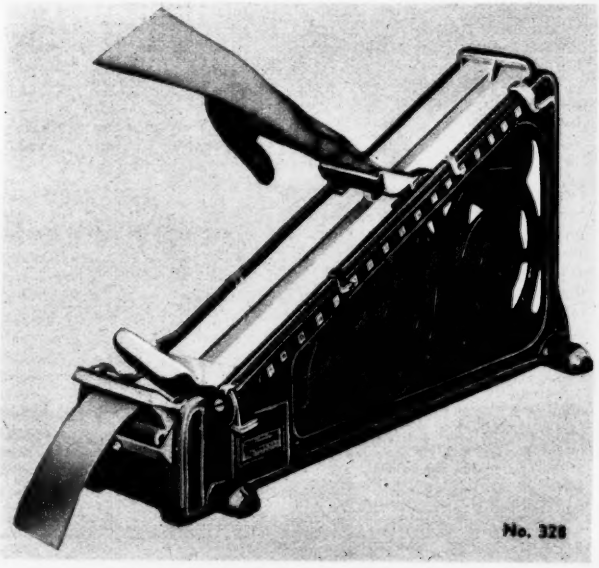
Price, each $25.50

(Send for Special Folder about this Machine)


No. 327

No. 327—"BESTOVALL" PACKAGE SEALING MACHINE. Made in Green Crackle, finished in triple duco. Trimmings are heavily nickeled over copper plate, assuring years of duty. Cleverly constructed handle controls, self-sharpening, double shearing triangular knife, assuring a keen cutting edge **indefinitely.** Tape cannot buckle, jam or clog. Other patented features take care of that. Rubber vacuum cup feet under a heavy body makes it stay put on any surface. Water reservoir made of heavy seamless nickel plated brass for instant removal, for refilling or cleaning when necessary. Equipped with a porous moistening roller of special compound, which spreads a smooth film of water over the tape, in just the right amount, so it grabs quickly and sticks tightly to the package. Another outstanding feature on "Bestovall" is a stop gauge, which is instantly adjustable to the operator's particular needs for any length of tape desired, from three inches to a foot or more. The tape chamber takes standard rolls of any weight tape wound gum side out, measuring up to six inches in diameter and from ½" to 1½" wide.

Price, each $16.00


No. 328

No. 328—"SHIPMENT COUNTERBOY" SEALING MACHINE. Equipped with automatic-plate-and-brush moistening unit, for **automatic moistening.** Makes tape really stick and hold. This it does with its patented "pressure-plate-and-brush" unit. The moisture is spread on by the brush. The amount of moisture and its even distribution is automatically regulated by the self-adjusting pressure plate. The human factors, carelessness and haste, are eliminated. Every piece of tape holds its package safely, no matter who operates the machine or how. Has added feature of automatically measuring your tape. On other "moisteners" you never know how long your strip is going to be. Loading is about twenty times as fast as on some other machines. Instead of the clumsy method of tearing tape against a saw blade, the Counterboy crucible steel shear cuts the tape off clean. Then there is Counterboy's "one-hand operation" which makes it the most rapid of all sealers to use, a great labor saver. The tape pick-up is new. Instead of grabbing sticky gum you grasp the tape by its edges, keeping hands clean. Instead of waving tape through the air, you grasp the upper end of the strip. Thus you can accurately locate the tape on the box so that it holds both box flaps equally well. This continuous, one-hand motion almost doubles the taping speed.

Price, each $35.00

(Send for Special Folder About this Machine)

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Ever Ready OFFERS

11 unusual COMBINATION DEALS

COMBINATION OFFER NO. C. 329

Hummer "Office Boy" Label Moistener . . . . . Value $2.00
For description see Page 37.

5000 Labels same size as illustrated on Pages 24 and 25 - Value 3.00
Printed red, blue or black.

Roll Label Holder, see Page 24 Value .35

Total Value $5.35

THIS ENTIRE COMBINATION . . $4.35

COMBINATION OFFER NO. C. 330

Ever Ready "Junior" Label Moistener, Cat. No. 316 Value $.50
For description see Page 37.

FREE with Roll Label order amounting to $6.00 or more! This offer is made in addition to the FREE Roll Label Holder offered with EVERY Roll Label Order.

COMBINATION OFFER NO. C. 332

"Packer" Moistener Cat. No. 323 . Value $5.00
For description see Page 37.

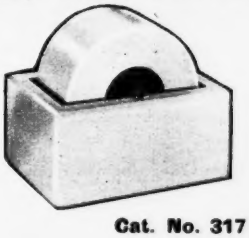
12 Rolls Plain Gummed Tape, either 1", 1¼" or 1½" wide . Value 1.75

Total Value $6.75

THIS ENTIRE COMBINATION . . $5.65

COMBINATION OFFER NO. C. 331

Ever Ready "Senior" Label Moistener,



Cat. No. 317

For description see Page 37. Value $1.50

FREE with any Roll Label Order amounting to $15.00 or more! This offer is made in addition to the FREE Roll Label Holder offered with EVERY Roll Label order.

COMBINATION OFFER NO. C. 333

"Seal-Rite" Sealing Machine, Cat. No. 321 . . . . . Value $3.50
For description see Page 37.

30 Rolls 1" Plain Tape (1 bundle)
or 24 Rolls 1¼" Plain Tape (1 bundle)
or 20 Rolls 1½" Plain Tape (1 bundle) Value $4.00

Total Value $7.50

THIS ENTIRE COMBINATION . . $5.95

Add $.07 per inch Roll for Boncraft tape—in brilliant colors, such as red, green, yellow, white, etc. Ask for special sample folder.

COMBINATION OFFER NO. C. 334

"Seal-Rite" Moistener, Cat. No. 322 . . . . . Value $5.00
For description see Page 37.

12 Rolls plain tape . . . . Value 1.75
1", 1¼" or 1½" widths.

Total Value $6.75

THIS ENTIRE COMBINATION . . . $5.65

COMBINATION OFFER NO. C. 335

"Packer" Moistener, Cat. No. 323 . . . . . Value $ 5.00
For description see Page 37.

16 Rolls 1½" Printed Tape, 35 lb. 500 ft. to the roll . . . . . Value 12.80

Total Value $17.80

THIS ENTIRE COMBINATION . . $14.75

COMBINATION OFFER NO. C. 336

"Packer" Moistener, Cat. No. 324A . Value $ 7.50
For description see Page 37.

32 Rolls 1½" Printed Tape (35 lb.) . Value 26.50
Printed two colors (red and blue) 500 feet to the roll

Total Value $34.00

THIS ENTIRE COMBINATION . . $28.50

COMBINATION OFFER NO. C. 337

Model "X" Counterboy, Cat. No. 325 or Bestovail, Cat. No. 327, Automatic Sealing Machine. Value $16.00
For description see Page 38.

25 Rolls—either 1", 1¼", 1½" Tape, 35 lb. 500 ft. to the roll . . Value 17.00

THIS ENTIRE Total Value $33.00

COMBINATION . . $27.50

COMBINATION OFFER NO. C. 338

"Packer" Moistener, Cat. No. 324A . . . . Value $ 7.50
For description see Page 37.

12 Rolls Plain Tape in 2" or 3" widths Approx. Value 5.00

Total Value $12.50

THIS ENTIRE COMBINATION . . $11.15

COMBINATION OFFER NO. C. 339

"Seal-Rite" Moistener, Cat. No. 322 . . . . . Value $ 5.00
For description see Page 37.

16 Rolls 2" Printed Tape 60 lb. weight (600 ft.) . Value 19.20

Total Value $24.20

THIS ENTIRE COMBINATION . . $18.75

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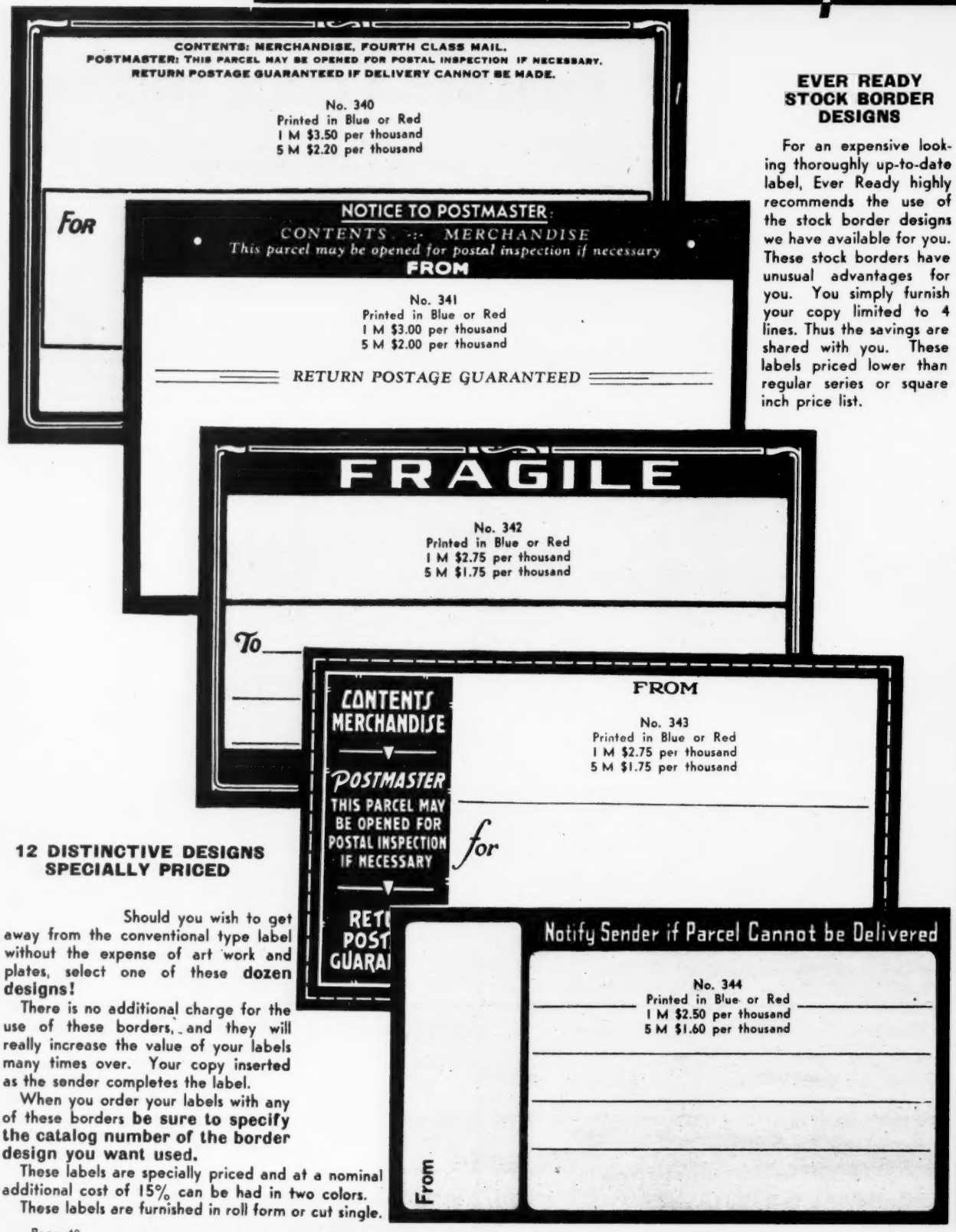
Ever Ready


CONTENTS: MERCHANDISE, FOURTH CLASS MAIL.
POSTMASTER: THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY.
RETURN POSTAGE GUARANTEED IF DELIVERY CANNOT BE MADE.
No. 340
Printed in Blue or Red
1 M $3.50 per thousand
5 M $2.20 per thousand
For
NOTICE TO POSTMASTER:
CONTENTS . . . MERCHANDISE
This parcel may be opened for postal inspection if necessary
FROM
No. 341
Printed in Blue or Red
1 M $3.00 per thousand
5 M $2.00 per thousand
RETURN POSTAGE GUARANTEED
FRAGILE
No. 342
Printed in Blue or Red
1 M $2.75 per thousand
5 M $1.75 per thousand
To
CONTENTS MERCHANDISE
POSTMASTER
THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY
FROM
No. 343
Printed in Blue or Red
1 M $2.75 per thousand
5 M $1.75 per thousand
for
Notify Sender if Parcel Cannot be Delivered
No. 344
Printed in Blue or Red
1 M $2.50 per thousand
5 M $1.60 per thousand
From

EVER READY STOCK BORDER DESIGNS

For an expensive looking thoroughly up-to-date label, Ever Ready highly recommends the use of the stock border designs we have available for you. These stock borders have unusual advantages for you. You simply furnish your copy limited to 4 lines. Thus the savings are shared with you. These labels priced lower than regular series or square inch price list.

12 DISTINCTIVE DESIGNS SPECIALLY PRICED

Should you wish to get away from the conventional type label without the expense of art work and plates, select one of these **dozen designs!**

There is no additional charge for the use of these borders, and they will really increase the value of your labels many times over. Your copy inserted as the sender completes the label.

When you order your labels with any of these borders **be sure to specify the catalog number of the border design you want used.**

These labels are specially priced and at a nominal additional cost of 15% can be had in two colors.

These labels are furnished in roll form or cut single.

© 1932—Ever Ready Label Corporation, New York, N. Y.

STOCK BORDER DESIGNS

Refer to.
PAGE 16 for Post Office Approval of Ever Ready Labels
PAGE 32 (Ever Ready Guarantee)

FROM

No. 345
Printed in Blue or Red
1 M $2.75 per thousand
5 M $1.75 per thousand

TO _____

FROM

TO -

No. 346
Printed in Blue or Red
1 M $2.50 per thousand
5 M $1.60 per thousand

FROM

No. 347
Printed in Blue or Red
1 M $2.00 per thousand
5 M $1.30 per thousand

for _____

Only Ever Ready Offer These Values

HANDLE WITH CARE

FRAGILE

No. 348
Printed in Blue or Red
1 M $3.00 per thousand
5 M $2.00 per thousand

POSTMASTER: CONTENTS: MERCHANDISE. THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY — — RETURN POSTAGE GUARANTEED.

FROM

No. 349
Printed in Blue or Red
1 M $2.00 per thousand
5 M $1.30 per thousand

TO -

HAND

No. 350
Printed in Blue or Red
1 M $2.50 per thousand
5 M $1.50 per thousand

For

from

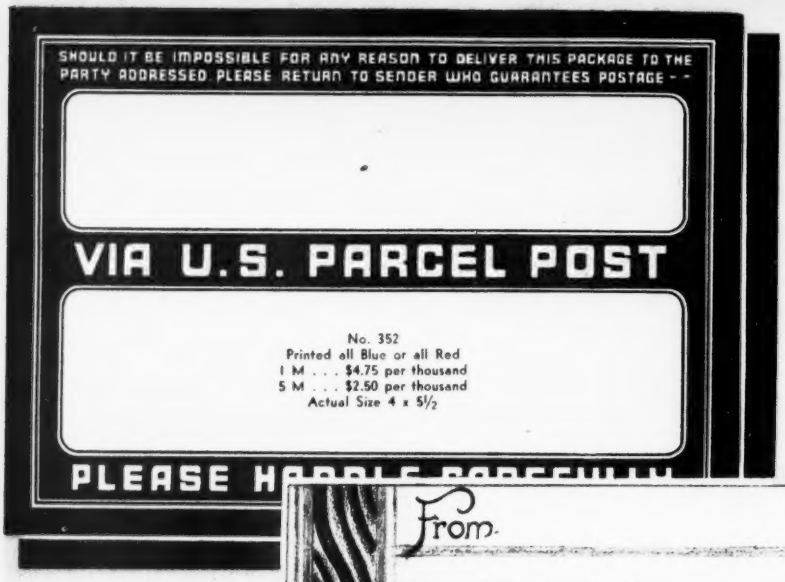
for

No. 351
Printed in Blue or Red
1 M $2.00 per thousand
5 M $1.30 per thousand

These Special Labels are supplied with or without guide lines for addressing. State your preference.

© 1932 by Ever Ready Label Corporation, New York, N. Y.

Ever Ready STOCK BORDER DESIGNS

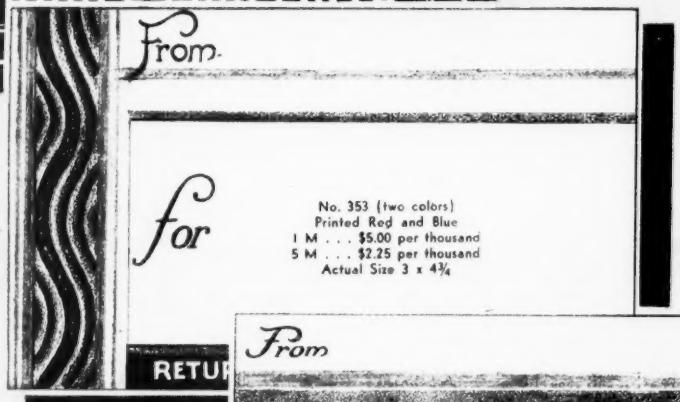

SHOULD IT BE IMPOSSIBLE FOR ANY REASON TO DELIVER THIS PACKAGE TO THE PARTY ADDRESSED PLEASE RETURN TO SENDER WHO GUARANTEES POSTAGE - -
VIA U.S. PARCEL POST
PLEASE

No. 352
Printed all Blue or all Red
1 M . . . $4.75 per thousand
5 M . . . $2.50 per thousand
Actual Size 4 x 5½

You'll appreciate these labels more when you see them with your copy inserted. Send us copy and we'll send one without charge if you're interested.

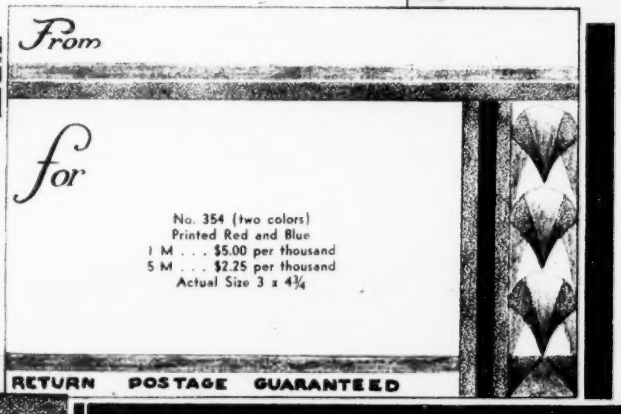
These colorful and distinctive labels can be secured at low cost only because we have necessary printing plates which we offer free—your own copy will be suitably embraced within these borders to best typographic arrangement.

Refer to Page 16
For U. S. Post Office Approval of Ever Ready Labels

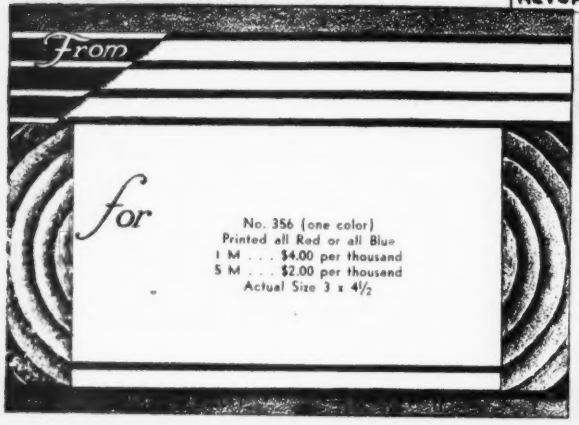


No. 353 (two colors)
Printed Red and Blue
1 M . . . $5.00 per thousand
5 M . . . $2.25 per thousand
Actual Size 3 x 4¾

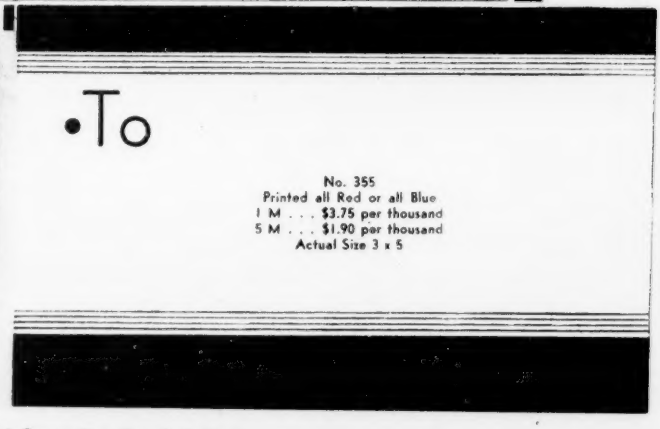
Here are five labels that will come in very handy when sending out your daily mail and parcel post shipments. They represent the most modern in designs! Examine them carefully. These modern border designs are featured for your use without any extra cost. Come in perforated roll of 1000, or flat. State which you prefer.



No. 354 (two colors)
Printed Red and Blue
1 M . . . $5.00 per thousand
5 M . . . $2.25 per thousand
Actual Size 3 x 4¾



No. 356 (one color)
Printed all Red or all Blue
1 M . . . $4.00 per thousand
5 M . . . $2.00 per thousand
Actual Size 3 x 4½



No. 355
Printed all Red or all Blue
1 M . . . $3.75 per thousand
5 M . . . $1.90 per thousand
Actual Size 3 x 5

© 1932—Ever Ready Label Corporation, New York, N. Y.

No. 357

No. 358

No. 359

No. 360

HAMBURG-AMERICAN LINE
PASSENGER'S NAME
STEAMER
SAILING
FOR PARIS
DELIVER TO BAGGAGE MASTER AT PIER 86, WEST 46th ST., NEW YORK CITY
Passengers must claim baggage before Baggage Master on Pier leaves for steamer.
FIRST CABIN BAGGAGE
NOT WANTED DURING VOYAGE
No. 361

No. 362

No. 363

No. 364

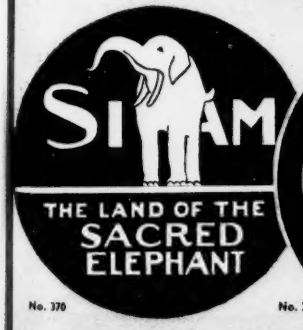
No. 365

No. 369

No. 366

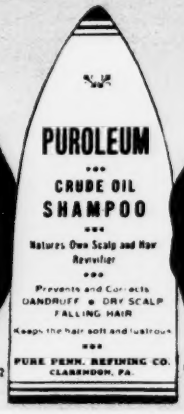
No. 367

No. 368



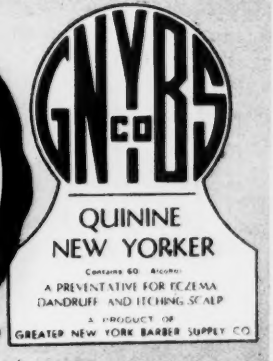
No. 370

No. 371



No. 372

No. 373



No. 374

EVER READY DIE CUT LABELS AND SEALS

There is something about die cut labels and seals that expresses a certain character quite essential for use with special products and services. As a good shipping label adds emphasis and appearance to your package, so a good die cut label or seal dresses up these special products, and serves in a way that none other can.

In spite of the fact that Ever Ready's specialty is roll labels, we realize the necessity of die-cut labels and seals for certain particular uses. To meet your demand for this type of work, **Ever Ready has in stock more than 2,000 dies of every size and shape.** When you specify the use of any of these dies, there is no added charge for the use of the die itself—only for the die cutting operation, for which we'll be glad to quote you. We cannot show all these dies in this limited edition, so we ask that you submit your requirements to us—and we'll respond with details and suggestions.

No. 375

No. 376

No. 377

No. 378

No. 379

No. 380

No. 381

© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM

It may interest you *to know*

That Ever Ready is equipped to serve the beginner, the neophyte entering a new venture with modest means.

There are so many possibilities in our mental and mechanical set-up at EVER READY that we hope you'll invite us to serve you.

MACY'S MEN'S STORE

Jean's Facial Cream

CLIPPER CRANBERRY JELLY HOME MADE PRESERVE Co. NEW YORK CITY

No. 1 PREPARING FLUID LITHO-ART

Special designs on special stock for special purposes

THE AMERICAN ARTISTS PROFESSIONAL LEAGUE — I AM FOR AMERICAN ART

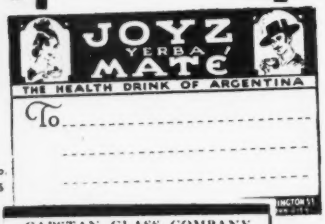
AMA Second Packaging Exposition Conferences · Clinics March 7-12-1932 Palmer House Chicago

XUM

No. 382

No. 383

No. 384

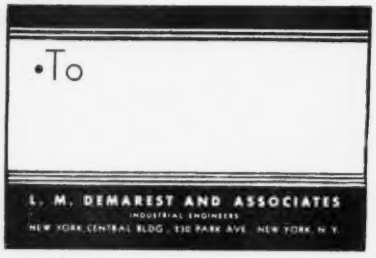


No. 385

No. 386

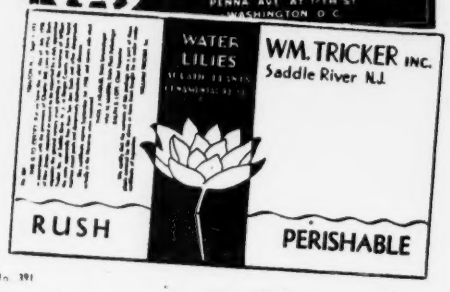
No. 387

No. 388



No. 389

No. 390



No. 391

hand lettered and

Reverse Plate Labels

Labels shown here (½ actual size) indicate a few of the possibilities for featuring trade marks, individual and distinctive designs, thereby securing "plus" advertising value in conjunction with the practical purpose of your labels.

These labels cost **no more** than the ordinary type label after you have paid the initial minimum expense of drawings and plates.

Our facilities enable us to create such artistic and distinctive designs. Incorporating trade marks and your copy at nominal cost, their advertising value will prove effective long after this first cost has been paid and forgotten.

PRICES

The cost of Ever Ready Hand Lettered and Reverse Plate Labels is figured on the square inch basis, the same as other Ever Ready Labels. The **only difference** is that the cost of art work and plates is added—and such drawings and plates become your property after order is completed. Unlike most other manufacturers, who add in the cost of drawings and plates on first order and reorders, we ask you to pay for these drawings and plates on the first order only. After that there is no charge for their use.

PRICES — ART WORK AND PHOTO-ENGRAVING

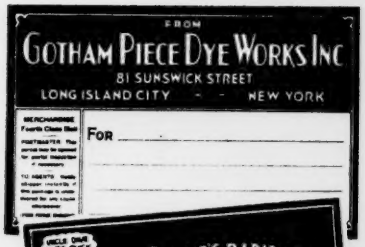
Submit your copy to us and we'll gladly quote specifically on the cost of art work and photo-engravings. Such art work and photo-engravings are charged for **at cost.**

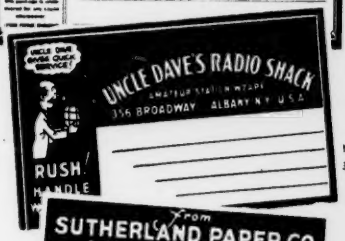
For example, drawing and plate for a label like No. 383 would cost about $4.50. Drawing and plate for No. 392 would cost about $5.00. Drawing and plate for a label like No. 399 would cost about $6.00. Drawing and plate for a label like No. 393 would cost about $7.00. You can readily see from these prices that the added advertising value the hand lettered and reverse effects give these labels offset the additional cost of the labels many times over.

No. 392

No. 393

No. 394



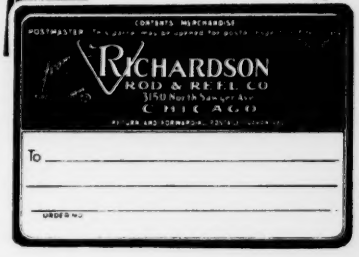


No. 395

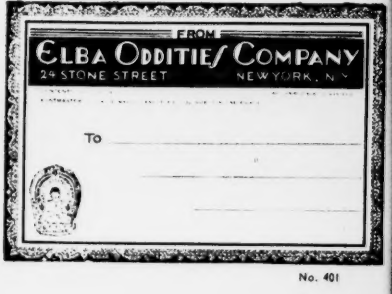
No. 396

No. 397

No. 398



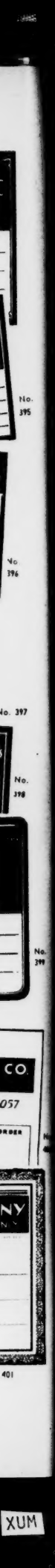
No. 399



No. 401

© 1932—Ever Ready Label Corporation, New York, N. Y.

XUM



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THE

XUM

Ever Ready OFFERS 36 Border Designs No Extra Charge

No. 402

You choose any of these borders in any of the sizes shown.

There are 6 different border designs.
Each design is produced in 6 different sizes.
6 x 6 = 36 Border Designs.

Labels produced in these sizes:

⑧ 2½ x 3	3 x 4 ⑫
⑩ 2½ x 4	3 x 5 ⑮
⑭ 2½ x 5	3 x 6 ⑱

There is no additional charge for using these original borders!

You arrange your copy inside these borders as you desire.

Borders of this kind lend distinction to the label—they are different, therefore, attention getters, the main purpose of all advertising. Designs of this character usually come under the heading of special art work and, therefore, are quite expensive. Ever Ready offers them as stock designs at no added cost.

THE BORDER IS TO THE LABEL AS THE FRAME IS TO THE PICTURE.

AMERICAN SAFETY RAZOR CORP.

GEM MICROMATIC RAZOR AND BLADES

315 JAY STREET BROOKLYN, N. Y.

To

No. 403

FROM:

WILLIAM R. WARNER & CO. INC.
MANUFACTURING PHARMACEUTISTS
113 WEST 18TH STREET, NEW YORK, N. Y.
RETURN POSTAGE GUARANTEED

SEC. 435½ P. L. & R.
U. S. POSTAGE
Paid
New York, N. Y.
Permit No. 12252

To

No. 404

No. 405

NOTICE

Local telephone calls ten cents for five minutes–five cents for each additional three minutes.
Zones No. 5-14-15–twenty cents for the first five minutes and fi
minutes.
On long distan
after completin
may avoid misu

No. 406

THIS DUMMY *for*

_____

_____

Requested by

_____

Date

Size_____

Cover_____

Pages_____

Weight_____

JONES SMITH & C
Paper Merchants + Deti

DRAPERIES and CURTAINS

- DRY CLEANED
- Removed and Rehung
- HOMES, CLUBS, SHOWROOMS, ETC.
- RUGS and CARPERTS CLEANED

Overstuffed Furniture Cleaned without Removing the Fabric from the Frame.

No. 407

The RENOFAB Process Inc.
EST. 1904
47-49 West 63rd St.
TR afalgar 7 - 6580

© 1932 by Ever Ready Label Corporation, New York, N. Y.

Ever Ready LABELS..... for publicity and advertising

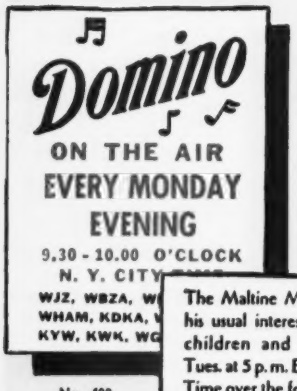
There is **no** business house, organization or profession that cannot profitably use gummed paper to achieve something new, or to perform some task **better.** This sweeping conclusion is supported by the array of useful ideas shown on these pages. Remember, of course, that these ideas are only a few of **many.**

RADIO BROADCAST STICKERS

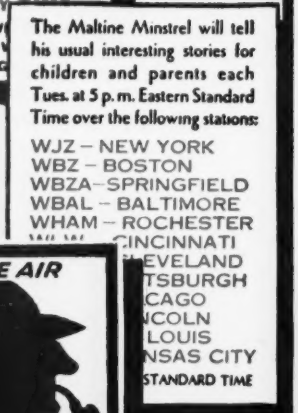
Used by radio advertisers to tie up with their broadcasts. They can be used as dealer helps—for advertisers or their dealers to paste onto letterheads, bills, envelopes, merchandise —the spot of color that delivers your message with a punch.

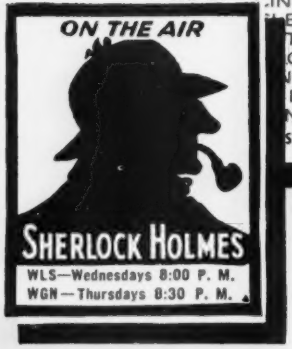
Ever Ready stickers help merchandise your radio programs—create consumer interest—an inexpensive medium that produces genuine results.

If you'll send us the literature and data about your program, we'll be in a better position to offer suggestions to you.



No. 408 (Above)


The Maltine Minstrel will tell his usual interesting stories for children and parents each Tues. at 5 p. m. Eastern Standard Time over the following stations:
WJZ – NEW YORK
WBZ – BOSTON
WBZA – SPRINGFIELD
WBAL – BALTIMORE
WHAM – ROCHESTER
STANDARD TIME



No. 409 (Above)

No. 410

STICKERS FOR ADVERTISING BOOKS, MAGAZINES, SHEET MUSIC, ETC.

Magazines campaigning to boost their circulations —publishers pushing the sale of particular books, tying them up with moving pictures—music publishers, plugging music for special purposes, etc., all can use these stickers most advantageously.

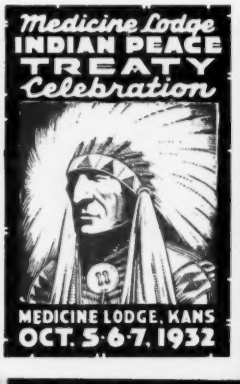
No. 411 (Above)

No. 412

STICKERS FOR EXPOSITIONS, CONVENTIONS, FAIRS, JUBILEES, ETC.

For many years organizations throughout the country have successfully used Ever Ready Labels to secure wide publicity and greater attendance—and how they **do** work—how they **do** secure continued interest by use of members and exhibitors on all outgoing correspondence and merchandise.

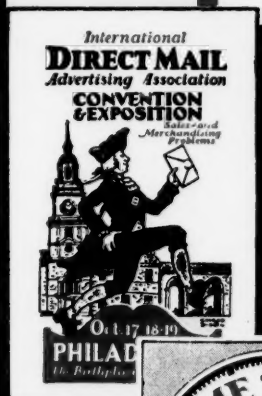
See Nos. 414–417



No. 413 (Left)

No. 414 (Above)

No. 415 (Above)



No. 416 (Above)

No. 417 (Right)

© 1932—Ever Ready Label Corporation, New York, N. Y.

TRAVEL AND STEAMSHIP LABELS

Travel Agencies—advertising special trips, seasonal tours, etc., are daily getting more business by using labels as part of their publicity. Again that extra spot of color bringing unusual and extraordinary returns.

Steamship companies, hotels, etc., also use labels advantageously—such labels are **expected** by travellers, and are **used** by them too!

No. 418

No. 419

No. 420

No. 421

No. 422

GENERAL ADVERTISING STICKERS

This, of course, is an unlimited field. We can't begin to suggest them all!

—Association trademarks.
—Miniature reproductions of magazine and newspaper ads.
—Miniature catalog cover reproductions.
—Miniature package reproductions.
—Change of address stickers.
—Advertising calendar stickers.

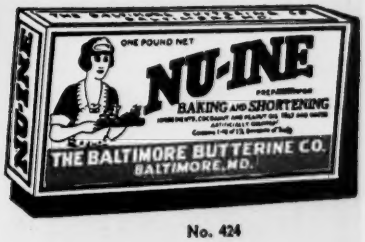
These are representative of the many hundreds of uses for advertising stickers. Let us suggest uses for stickers in your advertising. We'll be glad to help.

Ever Ready will be very glad to recommend such uses and designs for advertising and publicity labels too if you want them. We want you to feel that your inquiry is welcomed at all times.

No. 423

Association Secretaries find labels helpful in reaching their objective at a lesser cost than other publicity methods.

Distribution of Advertising Stickers helps build good-will at minimum cost.



No. 424

Label No. 424 is one of a series used to acquaint the trade with various products manufactured.

Label campaigns are interesting, effective, inexpensive. We'll be glad to suggest, plan and serve.

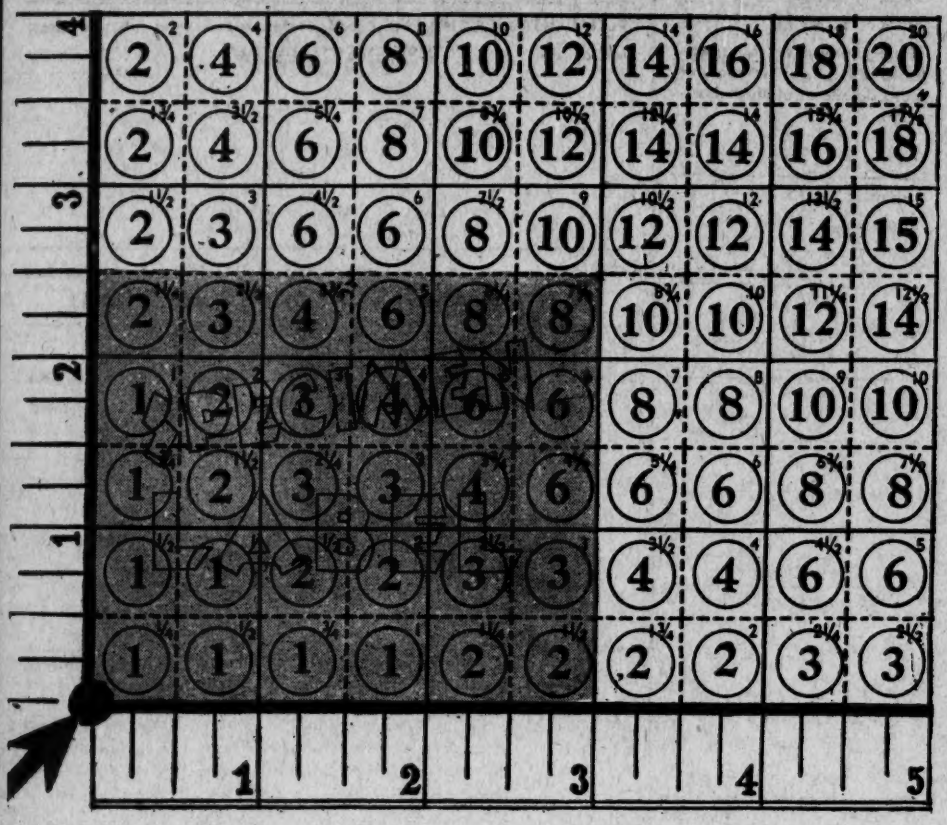
No. 425

No. 426

No. 427 (Right)

Prepared by LEON H. LEWIS, CRUTTENDEN & EGER, CHICAGO.
Special Photos by J. FLORIAN MITCHELL, NEW YORK, N. Y.

NOW! You Can ESTIMATE THE PRICE of Ever Ready Labels



Place YOUR label on the DOT on arrow in position similar to the specimen label.

IMMEDIATELY—upper right point of label strikes the encircled series number, which refers to the price list below.

Encircled number is the key to simplified price list and your estimate. (Small number gives actual square-inch area)

This SIMPLE ESTIMATOR is further explained in our HAND-Y-BOOK of labels on Page 4.

Series No. or Sq. In.	1	2	3	4	6	8	10	12	14	15	16	18	20	22	24
5M	$.55	.60	.70	.90	1.15	1.35	1.50	1.70	1.80	1.90	2.00	2.20	2.40	2.55	2.70
10M	.50	.55	.65	.80	1.00	1.20	1.30	1.50	1.60	1.70	1.80	1.85	2.00	2.10	2.40
25M	.40	.45	.55	.70	.90	1.05	1.15	1.35	1.45	1.50	1.60	1.70	1.85	1.95	2.25

XUM

HAND-Y-BOOK
Reference No.

Ship / Via: EXPRESS . . . . ☐ PARCEL POST ☐

or How? _____

How Many ?

What Size ?

Color Ink ?

Paper Stock { WHITE / GUMMED ☐

If ungummed or any special colored paper is required, note details carefully below:

Labels in ROLLS ☐

Other details

LABELS

Cut Single ☐

Cut and Padded ☐

Shall we Print

THIS WAY ?

OR THIS WAY ?

Check Which Way

Shall we perforate

LONG WAY ?

NARROW WAY ?

Check which

If Address or Shipping Labels are for Typewriter use, please check here . . . . ☐

PROOFS CAUSE DELAY
WE CHECK DOUBLE.
Only in urgent cases ask for one.

Price per thousand $_____

Price per Job . . . . $_____

Extra Charges . . . . $_____

EVER READY·LABEL·CORP.

257 WEST 17TH ST., NEW YORK CITY, N.Y.

Date _____ 193__

Sold to: _____

Address _____

Ship to: _____

SPECIAL INSTRUCTIONS on this order or details reference cuts, drawings, Electros, etc. USE SPACE BELOW:

COPY and special instructions or arrangements should be clearly sketched or outlined on a separate sheet of paper. (IMPORTANT)

TERMS: Net Cash

CHECKS make payable to the order of EVER READY LABEL CORP., New York

CREDIT: To firms satisfactorily rated — otherwise, references required of bank and 3 sources of supply. Rush orders or orders for less than $5.00 should be accompanied by remittance to save time.

REFERENCES

See HAND-Y-BOOK Page 32 for our References and Guarantees
Bristles with 427 Ideas • Have You Copy?

CONDITIONS: All claims must be made within 10 days. This order is subject to approval of manufacturer and thereafter not cancellable. 10% over or under run constitutes a good delivery. No verbal agreement (not confirmed) shall form a part of this contract. All Merchandise sold F. O. B. New York.

Salesman _____

Customer _____

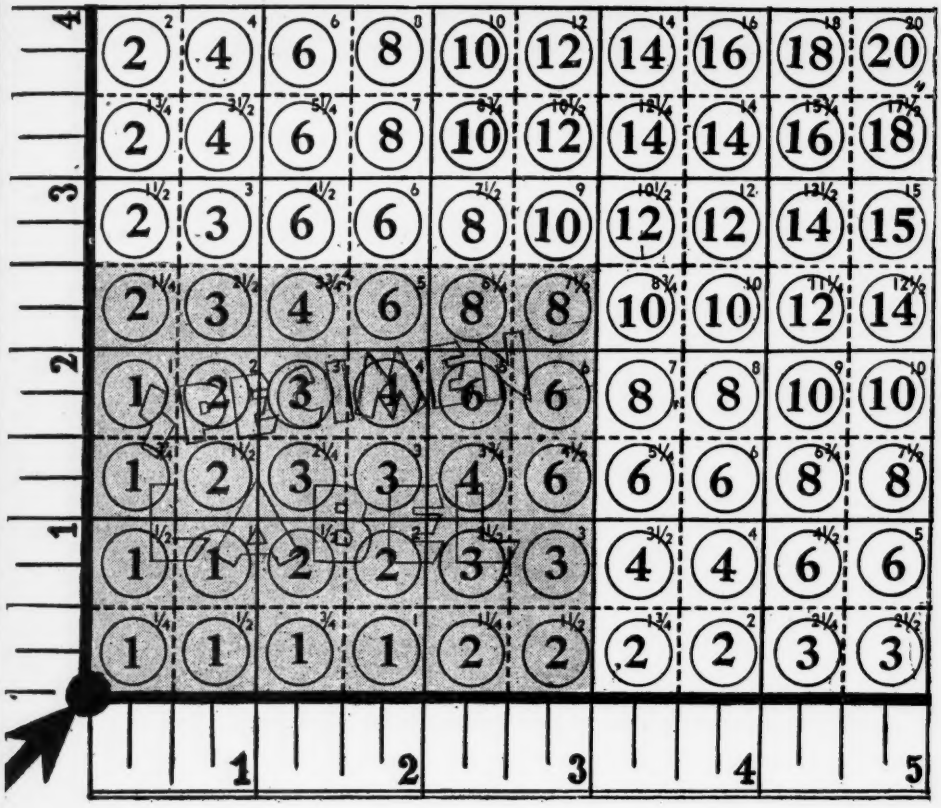
by _____

Accepted by _____

Estimate your own price of EVER READY LABELS

(See other side)

NOW! You Can ESTIMATE THE PRICE of Ever Ready Labels



Place YOUR label on the DOT on arrow in position similar to the specimen label.

IMMEDIATELY—upper right point of label strikes the encircled series number, which refers to the price list below.

Encircled number is the key to simplified price list and your estimate. (Small number gives actual square-inch area)

This SIMPLE ESTIMATOR is further explained in our HAND-Y-BOOK of labels on Page 4.

Series No. or Sq. In.	1	2	3	4	6	8	10	12	14	15	16	18	20	22	24
5M	$.55	.60	.70	.90	1.15	1.35	1.50	1.70	1.80	1.90	2.00	2.20	2.40	2.55	2.70
10M	.50	.55	.65	.80	1.00	1.20	1.30	1.50	1.60	1.70	1.80	1.85	2.00	2.10	2.40
25M	.40	.45	.55	.70	.90	1.05	1.15	1.35	1.45	1.50	1.60	1.70	1.85	1.95	2.25

XUM

HAND-Y-BOOK
Reference No.

Ship Via: { EXPRESS .... ☐ / PARCEL POST ☐

or How?

How Many ?

What Size ?

Color Ink ?

Paper Stock { WHITE / GUMMED ☐

If ungummed or any special colored paper is required, note details carefully below:

Labels in ROLLS ☐

Other details

LABELS

Cut Single ☐

Cut and Padded ☐

Shall we Print

THIS WAY ?

OR THIS WAY ?

Check Which Way

Shall we perforate

LONG WAY ?

NARROW WAY ?

Check which

If Address or Shipping Labels are for Typewriter use, please check here .... ☐

PROOFS CAUSE DELAY
WE CHECK DOUBLE.
Only in urgent cases ask for one.

Price per thousand $

Price per Job .... $

Extra Charges .... $

EVER READY·LABEL·CORP.
257 WEST 17TH ST., NEW YORK CITY, N.Y.

Date 193

Sold to:

Address

Ship to:

SPECIAL INSTRUCTIONS on this order or details reference cuts, drawings, Electros, etc. **USE SPACE BELOW:**

COPY and special instructions or arrangements should be clearly sketched or outlined on a separate sheet of paper. **(IMPORTANT)**

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Salesman

Customer

by

Accepted by

Estimate your own price of EVER READY LABELS

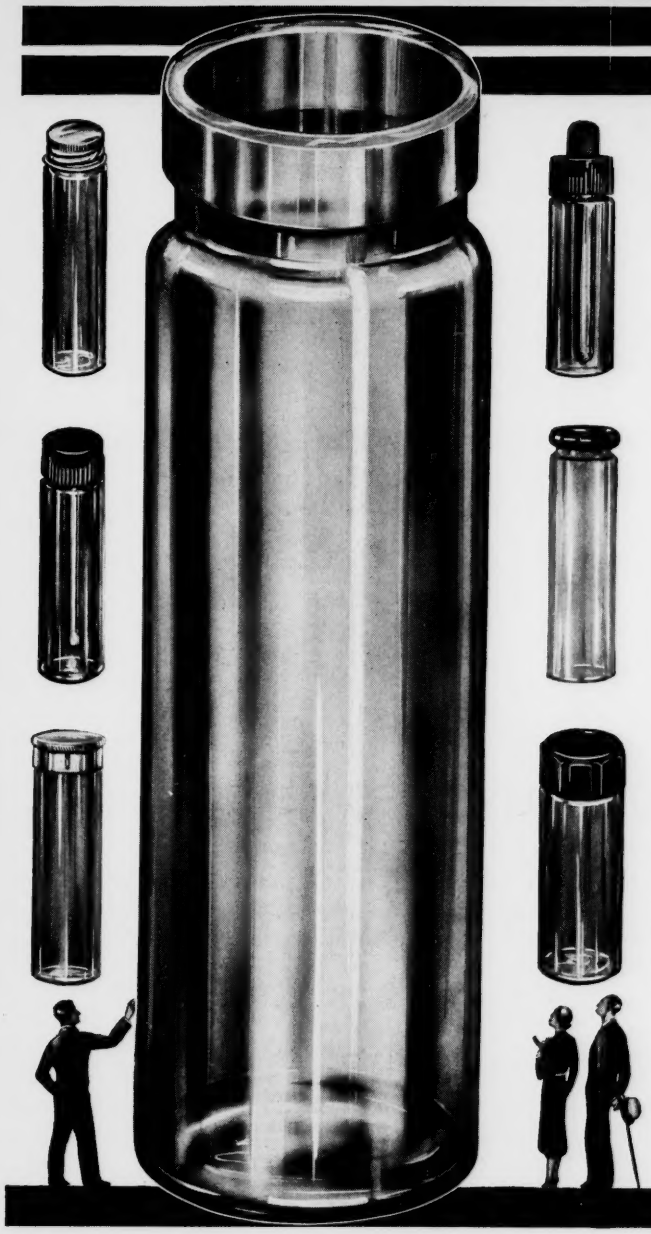
(See other side)

XUM

"HAND-Y-BOOK OF LABELS" File for Ready Reference— LABELS

XUM

The appeal of Glass is immediate and lasting



Glass packages command the best display space. They show the contents to best advantage, reflecting the care in preparation. They radiate purity and quality—and they increase sales.

Largest Vial Manufacturers in World

Every year more and more Kimble Vials are used by the Drug, Pharmaceutical and Perfume industries. Kimble vials are made of the very highest quality glass, in the largest plant of its kind in the world. Every step in their manufacture is performed in our own plant from molten glass to finished product. Kimble glass is made in our own continuous furnaces under close technical control to eliminate variations in the quality of the finished product.

Automatically Made for Uniformity

The fabrication of good vials is an art requiring extreme attention to detail—and this is best secured by *automatic machinery*. These machine-made vials have the greatest possible uniformity in height and accuracy in corkage, combined with bottoms and sides of equal thickness.

Re-Tempered for Greater Strength

After Kimble vials are processed, they are sent through re-tempering ovens (lehrs) to eliminate all conditions of strain or weak spots in the glass. This special treatment produces a homogeneous product remarkably free from hidden defects. For many years Kimble has set the standard for vials and through consistent and determined effort to that end is making better vials today than ever before.

In asking for quotations on Vials, please give us such information as you can concerning the intended use of the article. This is particularly important where special vials are to be made. We are in a position to advise and suggest on special sizes, where required.

Complete specifications and prices are furnished upon application.

KIMBLE GLASS COMPANY

VINELAND, NEW JERSEY.

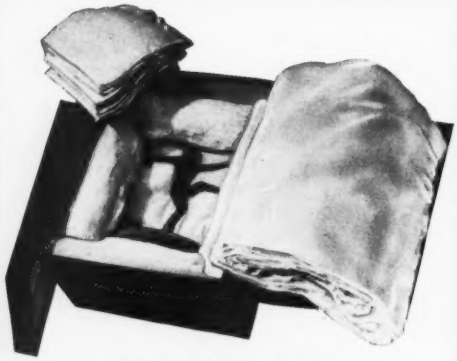
New York, 1440 Broadway; Philadelphia, 1616 Walnut Street; Boston, 131 State St.; Chicago, 23 N. Desplaines St.; Detroit, General Motors Bldg.

Evening in Paris cosmetic set, with ten-ply KIMPAK wrapped in tissue and placed at top of package to prevent movement and breakage.

Showing use of KIMPAK to protect sample bottle in demonstrating the mailing strength of a National Metal Edge Box.

SAVE TIME and MONEY by

Hundreds of firms use this new material because of positive economy



IDEAL FOR PACKING OF FRAGILE OBJECTS

Clean, resilient KIMPAK has proved itself ideal for packing of gifts and other fragile objects. Here is an ash tray packed in KIMPAK by Chas. A. Stevens & Co.

IT is the new idea in protective packing materials! Doing away with sawdust, linters and low-grade packing materials—yet with surprising economies.

Many hundreds of products are now protected with KIMPAK, in addition to liquids and fragile articles; cosmetics, vanities, wood and metal products with fine finishes that deserve KIMPAK'S super care in transit. KIMPAK plays a part in the success of low cost merchandise, too.

KIMPAK is especially valuable for packing liquids because it absorbs 16 times its weight in moisture and conforms to Postal regulations. It is amazingly low in cost and because of its bulk and lightness gives greater protection. Customers are doubly pleased with its clean, soft appearance.

It comes in rolls, sheets or pads, in various thicknesses—plain or backed with Kraft (smooth, creped or waxed) jute liner, or tissue, according to your requirements. See sample at right and write for more details.

Illustration shows bottle of Sanford Writing Fluid ready to be wrapped in KIMPAK and placed in carton for mail shipment.

KIMPAK protects mail samples against breakage. Illustration shows sample bottle of Pepsodent Antiseptic which was wrapped in KIMPAK and placed in package for mailing.

by packaging with KIMPAK

Note this sample, light weight, utmost protection, super absorbent . . . . .

(It is 10-ply tissue backed)

Kimpak

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

CREPE WADDING

Kimberly-Clark Corporation
Neenah, Wis.

Address nearest sales office:

Chicago	New York	Los Angeles
8 So. Michigan Ave.	122 E. 42nd St.	510 W. 6th St.

THE LIQUID CARBONIC CORPORATION

Manufacturers of

O. & J.
Automatic Labeling Machines

National
Semi-Automatic Labeling Machines

General Office: 3100 S. Kedzie Ave.
CHICAGO, ILLINOIS

Branch Offices

Atlanta, Georgia
Boston, Massachusetts
Buffalo, New York
Cincinnati, Ohio
Cleveland, Ohio
Dallas, Texas
Detroit, Michigan
Denver, Colorado
Kansas City, Missouri
Los Angeles, California
Minneapolis, Minnesota
New York, New York
New Orleans, Louisiana
Philadelphia, Pennsylvania
Pittsburgh, Pennsylvania
St. Louis, Missouri
San Francisco, California
Seattle, Washington

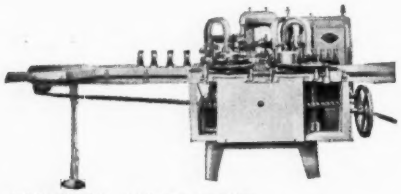
Liquid Carbonic Canadian Corp., Ltd.
Montreal, Quebec, Canada

Liquid Carbonic Canadian Corp., Ltd.
Winnipeg, Manitoba, Canada

THE COMPANY

The Liquid Carbonic Corporation, founded in 1888, is the world's largest manufacturer of Bottling Machinery and Carbonic Gas. In 1929 it acquired the O. & J. Machine Company at Worcester, Mass., and the National Labeling Machine Company, Long Island City. The products of both of these are now being manufactured at the Liquid factory in Chicago.

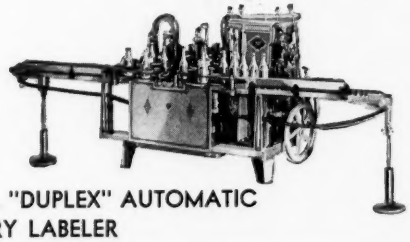
PRODUCTS



O. & J. "SINGLE" AUTOMATIC ROTARY LABELER

The "Single" O. & J. Labeler is a rotary type machine and is completely automatic. It has a capacity of 80 containers per minute or 3,200 dozen containers per 8-hour day.

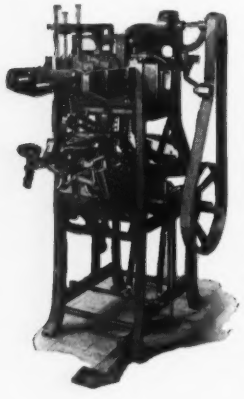
There are eight heads and top grips for receiving and holding the bottles. By reason of these eight heads the machine operates at a comparatively slow speed.



O. & J. "DUPLEX" AUTOMATIC ROTARY LABELER

The Duplex Labeler is a large capacity rotary type machine, completely automatic. It will handle 120 containers per minute or 4,800 dozen containers per 8-hour day.

The operation of this machine is similar to that of the "Single" machine described at the left, the extra capacity being obtainable by having ten heads instead of eight on the turntable, and two points at which labels are affixed to the containers.



NATIONAL "STANDARD" LABELER

This is a hand fed or semi-automatic labeling machine. With it practically any size bottle may be labeled. with either body or neck labels or both.

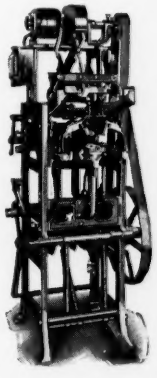
When equipped with a foiling attachment, foil may also be applied.

This machine has a capacity of 40 containers per minute or 1,600 dozen containers per 8-hour day.

NATIONAL "MIDGET" LABELER

This machine is a smaller and simpler model of the "Standard" type labeler also shown on this page. It will affix a single label on anything from a ½-oz. vial up to a quart bottle, provided the labels do not go more than half way around the bottle.

This machine has a capacity of 40 containers per minute or 1,600 dozen containers per 8-hour day.



SERVICE RENDERED BY REPRESENTATIVES

The labeling machine division of the "Liquid" can help you increase the efficiency of your labeling operations—by speeding up production—by more accurate labeling (especially on difficult labeling jobs) by economizing through fewer machines and less manpower.

One of our qualified labeling machine representatives will be glad to call and discuss your labeling problem. He has facts and figures on comparative labeling costs, savings in time, money and labor on various labeling operations.

Write for Catalog

We will be glad to send you, on receipt of a request on your letterhead, a copy of our booklet, "Labeling Machines." It contains a vast amount of valuable information on labeling equipment.

Why is it . . .

- That several of the leading perfume and cosmetic distributors use on their packages a Hazen paper?
- That many prominent candy makers use a Hazen paper on their boxes?
- That nationally known silversmiths box their products with a Hazen paper covering?
- That department stores find Hazen paper ideal for their packaging requirements?
- That many hosiery makers specify Hazen papers for their box coverings?
- That many stationery manufacturers package their papeteries with a Hazen covering paper?
- That in nearly all classes of boxed merchandise Hazen papers are to be found?

The Answer . . .

will be found in our Sample Books.

They will be gladly sent on request.

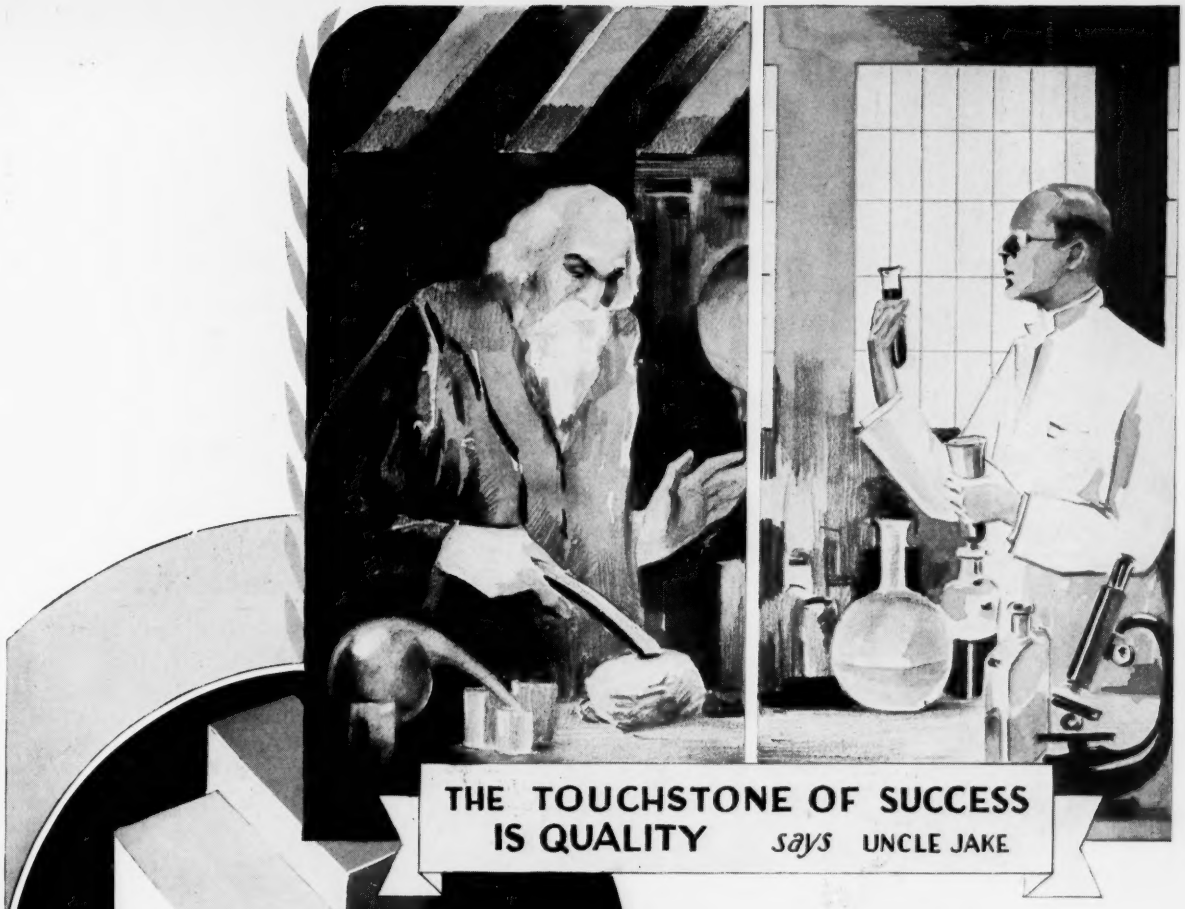
HAZEN PAPER CO.

Makers of Distinctive Papers

HOLYOKE, MASSACHUSETTS

BUY AMERICAN!

Printed on Hazen "Pin Point" 98 NG 55



THE TOUCHSTONE OF SUCCESS IS QUALITY *says* UNCLE JAKE

"Like the alchemist who touched metal on stone in a patient search for gold—the business man today finds the 'treasure' of profits only when he uses the Touchstone of Quality."

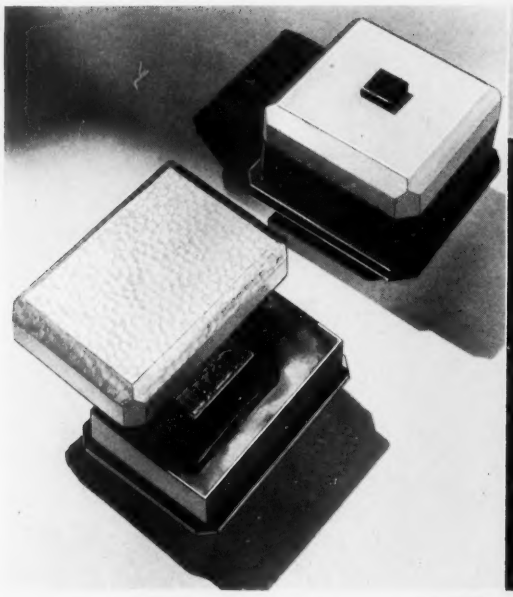
You who seek to hold to highest quality in food production are faced, also, with the problem of its protection; its safe, attractive presentation to the home.

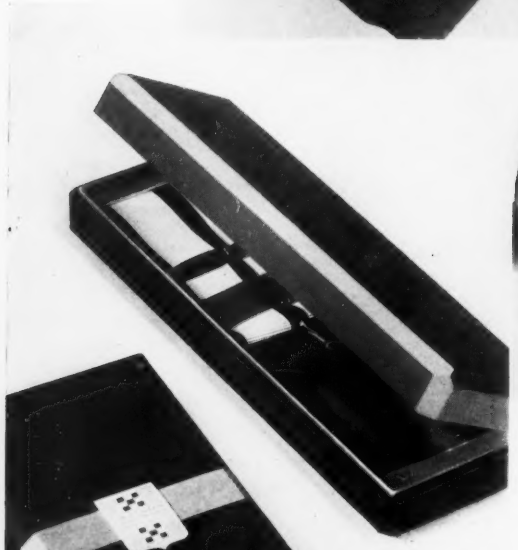
KVP Laboratory experts are continually at work to determine the exact kind of paper required to keep foods safe in transit. Products which formerly had only a local sale for a limited season, are now shipped the world over, the year 'round. This calls for specialized science in the making of Protective Papers.

We appreciate the confidence of that leading clientele who depend on KVP quality to sustain their own unchanging standards. We are at your service to confer on specific problems as they arise in your business.

KALAMAZOO VEGETABLE PARCHMENT COMPANY
Parchment (Kalamazoo County) Michigan

KVP PROTECTIVE PAPERS





EXCLUSIVE STYLES
IN A
VARIED LINE
OF
FOLDING AND SET-UP BOXES

HEARTS	CANDY
OVALS	PERFUME
ROUNDS	CIGARS
ODD SHAPES	NOTIONS

LEBANON
PAPER BOX CO.
LEBANON, PA.

NEW YORK OFFICE
51 MADISON AVE.

XUM

DULLSET INKS

simulate artist's originals.

Their soft brilliance equals

water color . . . but

DULLSET INKS

are moisture proof.

Whether opaque or trans-

parent

DULLSET INKS

give delicate, even tones.

On colored papers,

opaque

DULLSET INKS

produce pure colors.

By overprinting, trans-

parent

DULLSET INKS

give widely varied colors.

On all fine packaging use

GEO · H · MORRILL · CO.

DIVISION
GENERAL PRINTING INK CORPORATION
100 SIXTH AVENUE · NEW YORK

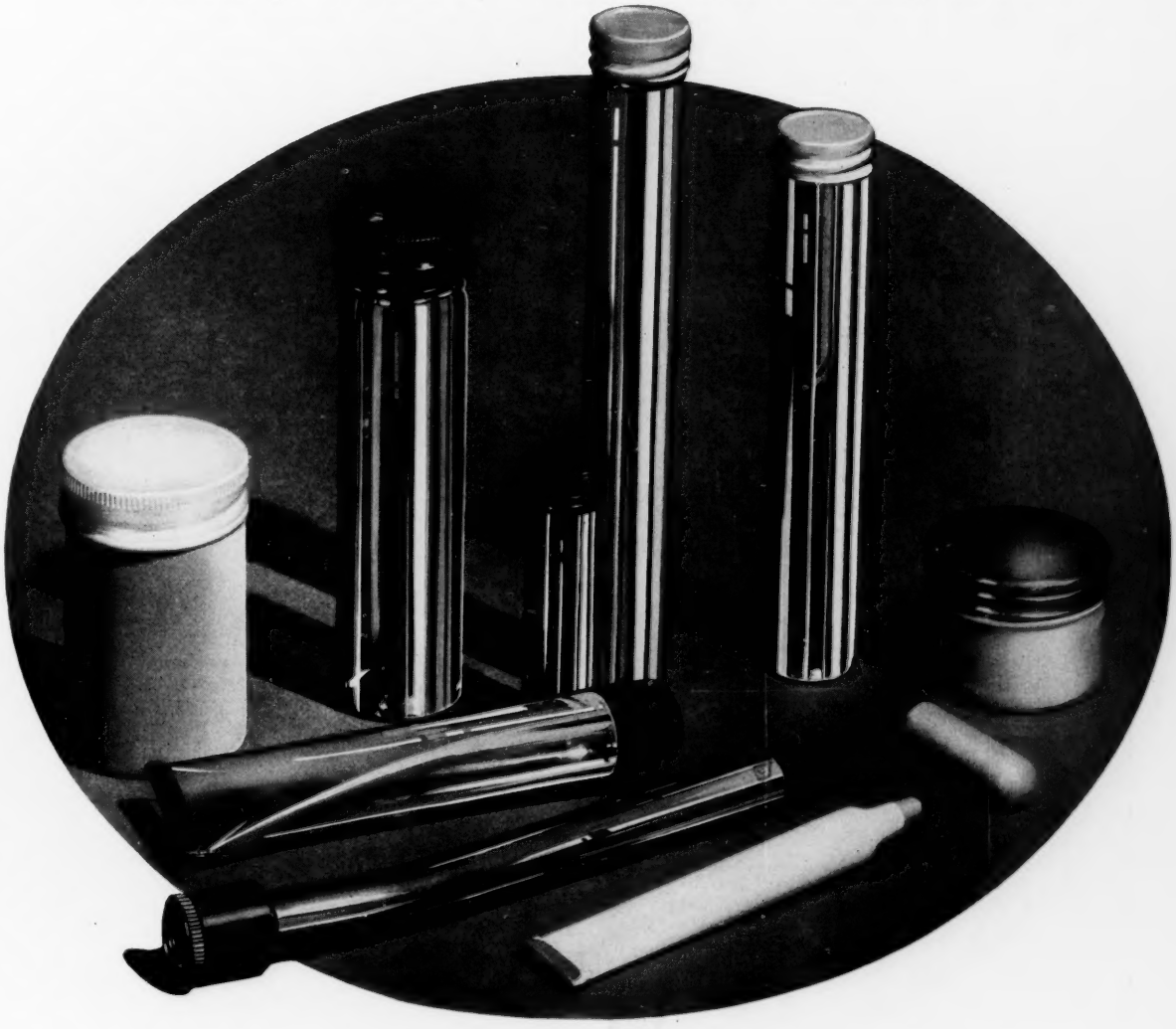
DULLSET INKS

THIS PAGE DESIGNED AND PRINTED BY
JOHN C. FROHN · 10 Thacher St. · Boston · Mass.
CREATOR and MANUFACTURER of HIGH GRADE BOX WRAPS

XUM

LUSTEROID

VIALS, TUBES, JARS, BOTTLES, ETC.



Light in Weight and Unbreakable

Made in a variety of colors—opaque as well as transparent (also clear transparent)—these containers offer an unusually attractive method of packaging numerous products.

Their pleasing appearance can be further enhanced with metal or molded closures in contrasting or harmonizing colors.

From a practical packaging standpoint—these containers possess many splendid advantages. They have unusual strength, are remarkably light in weight, odorless and seamless—all of which make for greater efficiency and economy.

May we send you samples and full particulars.

LUSTEROID CONTAINER COMPANY, INC.

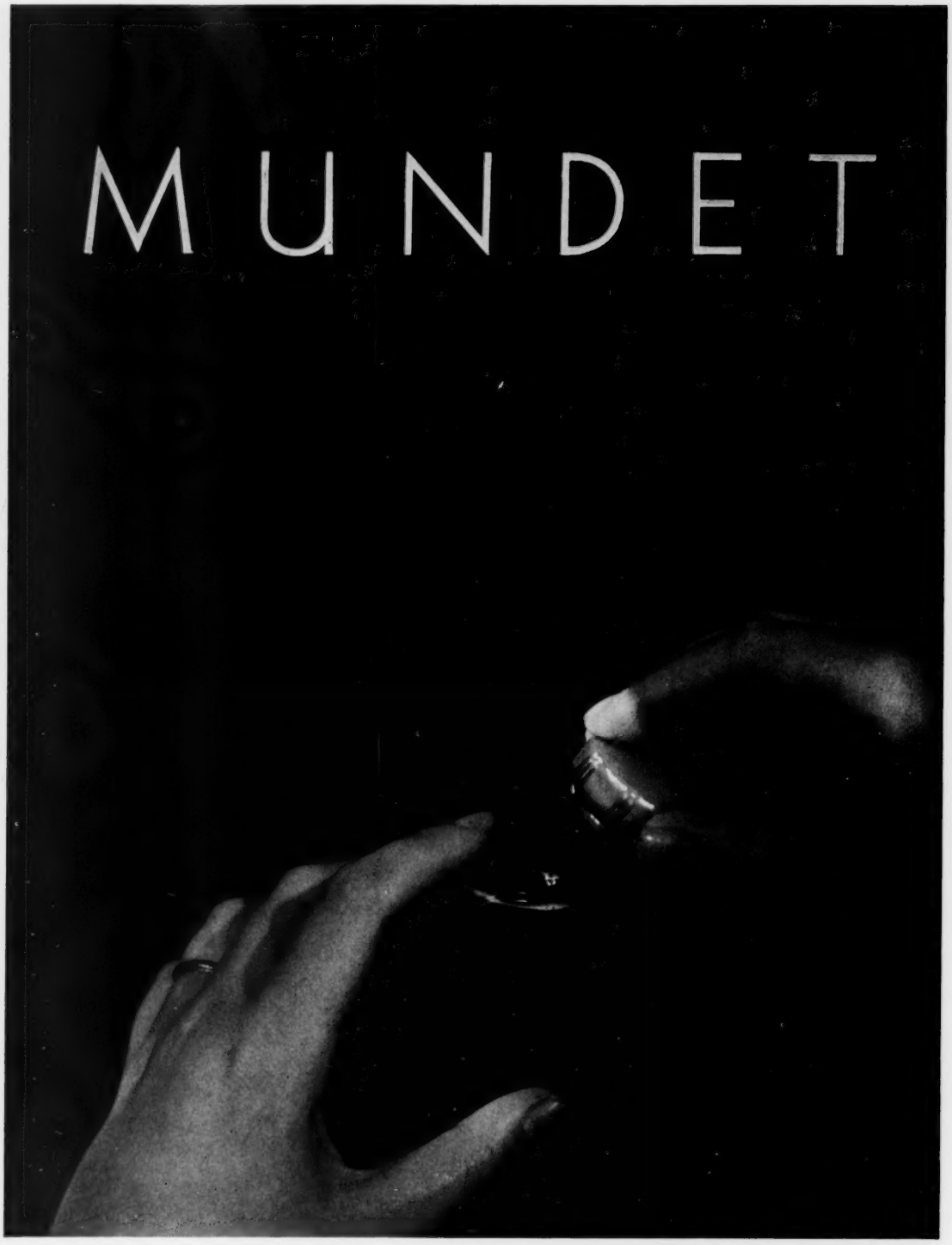
• • FORMERLY LUSTEROID DIVISION OF SILLCOCKS-MILLER COMPANY • •

10 PARKER AVENUE, WEST — SOUTH ORANGE, NEW JERSEY

CELLULOID VIALS, TUBES, JARS, BOTTLES AND SPECIALTIES

XUM

MUNDET



The molded flange on Mundet Closures prevents contents from getting on hands, protects the pouring lip of bottle and makes easy the opening and re-sealing of bottle. It also adds greatly to the beauty of the container. No special glass finish required and no special machinery is necessary to maintain speedy production in sealing with these closures. They are manufactured to fit most cork finish bottles. Their cost is no greater than ordinary molded closures.

Send a sample of your product and we will return it sealed with the new Mundet Closure.

MUNDET CORK CORP., BROOKLYN, N. Y.

BRANCH OFFICES

Montreal, Can.	Tulsa	Houston	Cleveland	Atlanta
Toronto, Ont.	Chicago	Philadelphia	Cincinnati	Detroit
St. Louis	New Orleans	San Francisco	Los Angeles	Denver

keep the bwyer in step

XUM

Tune each instrument to the right pitch. Play them in the right measure at the right time with proper direction.

LINE UP

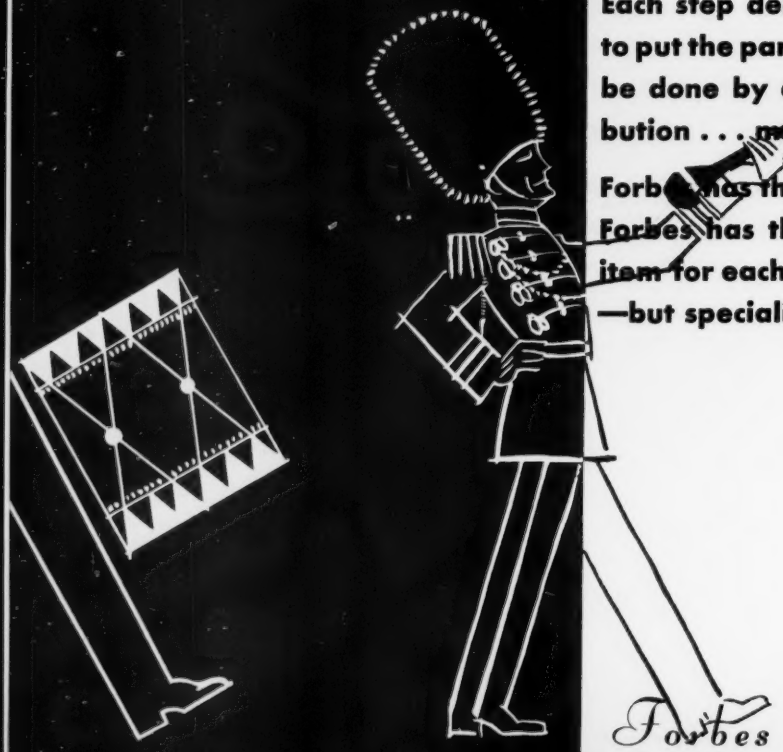
YOUR PROSPECTS

and march them to your product

BUILDING a need or a want for your product can't be done with a single ad . . . It can't be done with a single medium . . . The prospect must be reached at different times, in different moods, in different places—when he's in the market, when he's not . . .

Each step demands a different form of advertising to put the particular sales-story across . . . Each must be done by experts who know markets . . . distribution . . . media . . .

Forbes has the men . . . Forbes has the know-how . . . Forbes has the equipment . . . Forbes creates each item for each step . . . Forbes manufactures them all —but specializes in each . . .

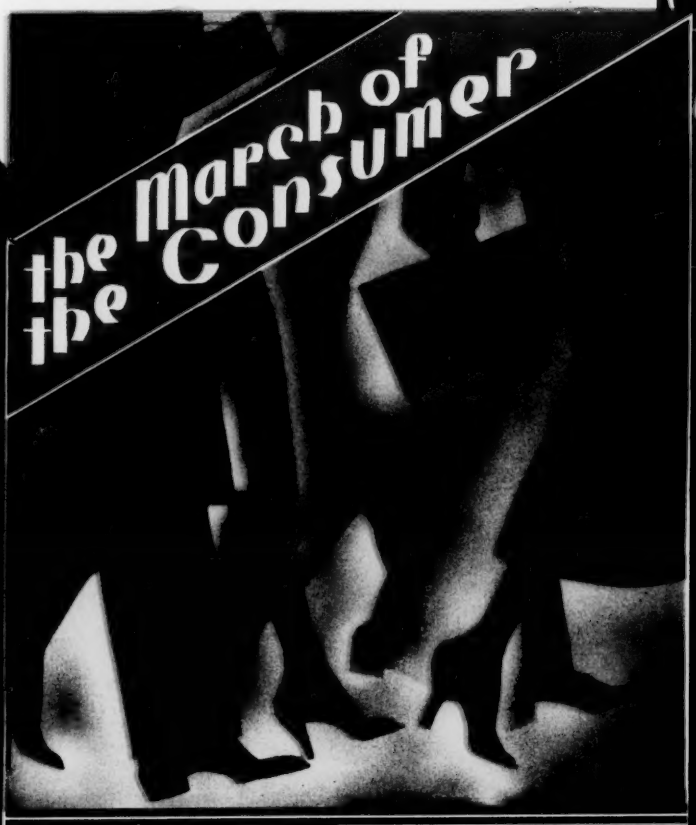


Forbes can furnish everything

TRY THIS ON YOUR PROSPECTS

to

XUM



TRY THIS ON YOUR PROSPECTS

Instrumentation by FORBES

Instruments by FORBES

POSTERS: 24-Sheet, 3-Sheet, 1-Sheet, Wagon, Window • CAR CARDS • BANNERS • DISPLAYS: Multipiece, Cutout, Flasher, Animated • PAPER TRIMS • STREAMERS • CONTAINERS • COUNTER CARDS • CUTOUTS • MERCHANDISERS • BASKETS: Counter, Floor • HANGERS • FESTOONS • CARTONS • LABELS • STICKERS • WRAPPERS: Paper, Cellulose (in rolls), BOOKLETS • COVERS • FOLDERS: Broadsides, Novelty, Die-cut, Illustrated Letters • CIRCULARS • MAILING CARDS • ENVELOPE ENCLOSURES • CATALOGS • BULLETINS • HOUSE ORGANS • PAMPHLETS • PACKAGE INSERTS • ANNOUNCEMENTS • CALENDARS • Lithographed, Die-stamped • ART PLATES • NOVELTIES • STATIONERY • MENUS • POLICIES • BONDS • DIPLOMAS • BLOTTERS CHECKS • BUSINESS CARDS

FORBES

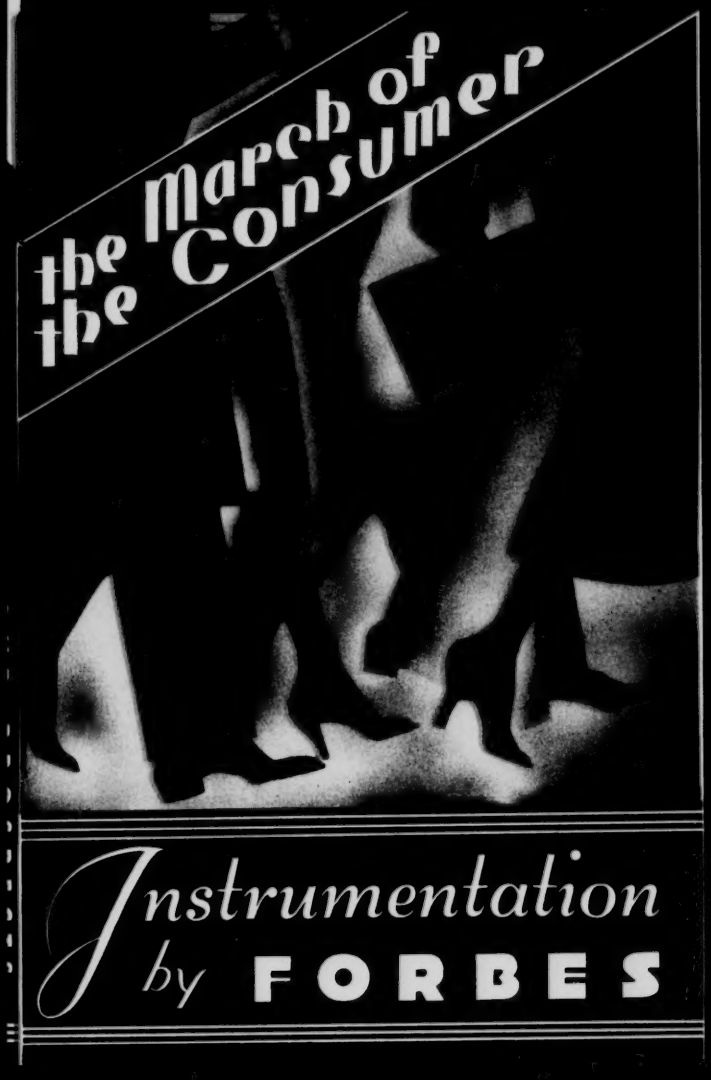
LITHOGRAPH MFG. CO.

OF BOSTON

NEW YORK • PHILADELPHIA
CHICAGO • CLEVELAND
DETROIT • ROCHESTER

to keep the parade marching

XUM


the March of the Consumer
Instrumentation by FORBES

FORBES . . .

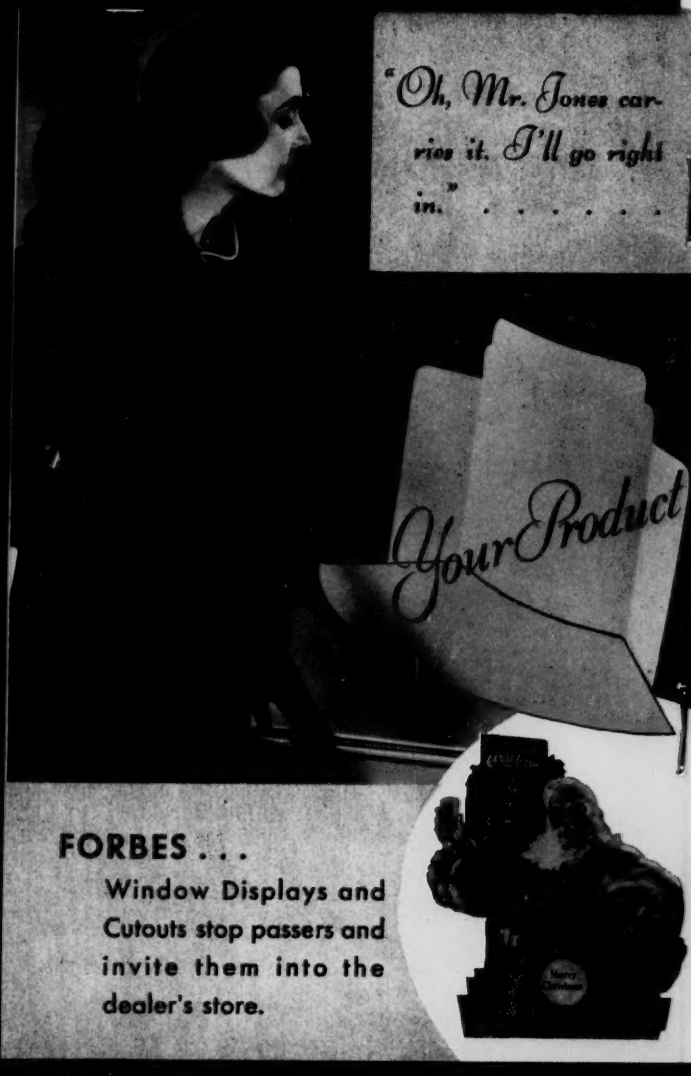
Booklets, Folders and Direct Mail Campaigns introduce your product and arouse interest at home.

XUM

FORBES . . .

Posters and Car Cards are constant reminders, and develop interest out of doors.

XUM



FORBES . . .

Window Displays and Cutouts stop passers and invite them into the dealer's store.

XUM

Jones car-
ll go right
. . . .

"Here it is! I'll look it over while I wait." . . . . . .

Product

Your Product

FORBES . . .

Merchandisers, Display Containers and Baskets put your product on the dealer's counter.

XUM

FORBES . . .

Re-styled Cartons, Labels and Wrappers are your final arguments to clinch the sale.

XUM

"If their other products are as good, they are worth a trial. . . . I must save these coupons for Junior."
Your Product
Your Product
KNOX GELATINE
A Delicious Food of Superior Quality

FORBES . . .

Package Inserts and Merchandising Novelties sustain interest and bring users back for more.

XUM

Words & Music by

LITHOGRAPHY

TYPE PRINTING

DIE STAMPING

CELLULOSE PRINTING

EMBOSSING

PROCESS PRINTING

FORBES

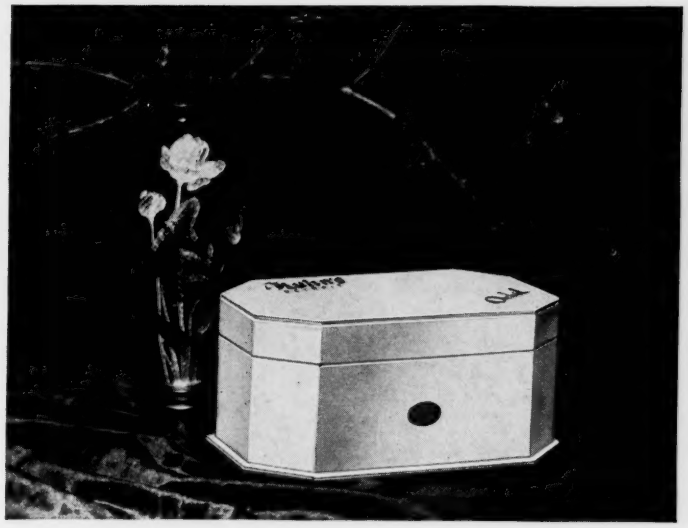
IDEAS that sell your goods . . . Merchandising plans that speed turnover and cut red tape . . . Experienced men, who know what it's all about, from contact with dealer and buyer, will put all they have into helping solve your problem . . . Forbes can do all or any part of your creative work . . . and do it right . . .

FORBES

LITHOGRAPH MFG. CO.

OF BOSTON

XUM



The Aristocrat of Cover Papers

THE product is only as good as the package. This is the assumption of the consumer nowadays due to the emphasis placed upon the package in modern merchandising. The container must reflect the quality of the contents! If your product is good, you can impress its quality upon the public mind instantly with a MOSINEE CELLUSUEDE covering on the box. The luxurious appearance of Cellusuede will distinguish it on any shelf or counter.

MOSINEE CELLUSUEDE is inviting to the eye. It has the lure of leather for only the price of a good cover paper. It is a better "suede" with a flawless finish that prints and embosses beautifully. Easily handled and applied, and especially adaptable to odd shapes and boxes of an unusual nature.

Seventeen beautiful colors -- one to reflect the character of any product -- available in MOSINEE CELLUSUEDE box covering. A swatch book showing all colors and full size sample sheets for creative work are gladly sent upon request.

MOSINEE PAPER MILLS COMPANY
MOSINEE, WISCONSIN

MOSINEE
CELLUSUEDE

MANUFACTURED UNDER U. S. PATENT No. 1883535

MANUFACTURERS who wish to present their products to the consuming public in such a manner as to benefit by the visual appeal of the actual merchandise, will find Munson Bags admirably adapted for the purpose.

Tear off one of the accompanying samples and note the superior features of these bags—such as, extra strength of all seams, folds and corners—together with a complete moistureproof liner of transparent Cellophane.

They are the most practical and serviceable bags of their kind on the market—in addition to their value as sales stimulators.

MUNSON BAGS

Munson Bags can be furnished, reinforced also in a variety of colorful kraft papers, and glassine.

Send us your product and we will package it in a Munson Bag of the correct size and shape and return it to you, then you can judge for yourself as to its value in the merchandising of your product.

THE MUNSON BAG CO.

10271 BEREA ROAD

CLEVELAND - - - - - - - OHIO

XUM

Serviceable
Practical
Economical

The
Rainbow Bag

Reinforced and
100% Moistureproof Bags

Made of DU PONT CELLOPHANE

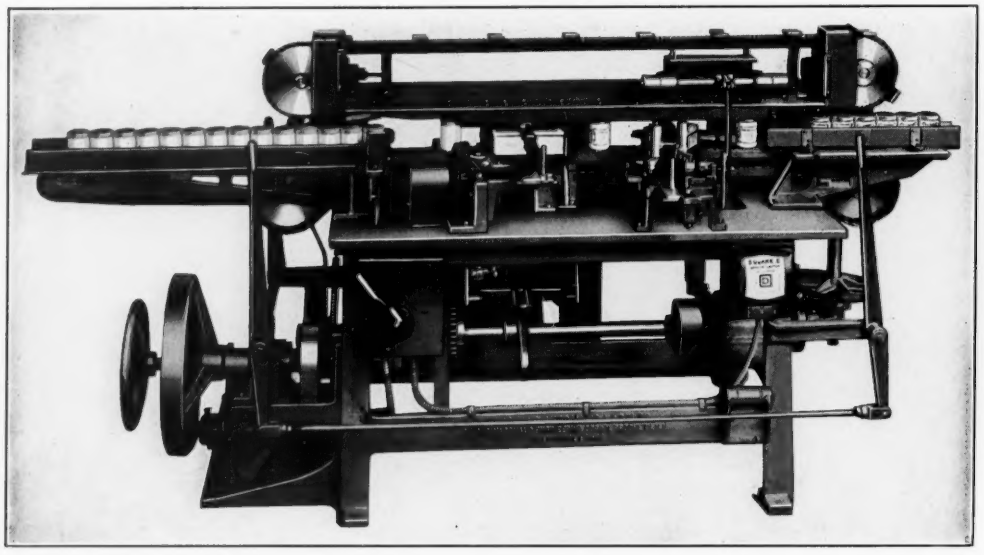
Pat. July 19, 1932. No. 1,868,069.
THE MUNSON BAG CO.

"McDONALD" Straight AUTOMATIC

STRAIGHT THROUGH ——→ STRAIGHT THROUGH ——→ STRAIGHT THROUGH ——→ STRAIGHT THROUGH

THESE LABELING MACHINES are STRAIGHT-LINE type (not rotary). They automatically feed the package, or container, and apply paper labels on bottles, boxes, etc.

McDonald labelers are specially designed and custom built for your particular type and size of package. They are not stock machines and do not have standard movements that are very often a hindrance to speed and to first class, accurate, clean labeling. Noted for their extreme simplicity, speed and perfect workmanship, they have labeled many nationally known products and are thoroughly established.



ALL-AROUND LABELER (above)—Applies one label all around the body, or the body and neck of bottles. It is also of the STRAIGHT-LINE design employing the latest and most improved method for applying gum over the entire surface of the label and for lapping it accurately.

SPOTTER—Labels round bottles with raised lettering by automatically feeling the letters and turning the bottle to the proper position before applying the label. Your trade mark in the glass means a great deal if you can properly and economically apply the label in the right place. This machine does it.

Important Features: Does not require inspectors to complete the job. Adjustable for different sizes in 10 minutes. Gums the entire surface of the label.

Specifications —Conveyors—34 in. above the floor.. Length—7 ft. overall. Weight—1400 to 2000 lbs. Motor—½ H. P.

McDONALD ENGINEERING CORP.

210 VARET STREET, BROOKLYN, N. Y.

LOS ANGELES 443 So. San Pedro St. | LONDON Windsor House, Victoria St. S.W.1 | CHICAGO 222 W. Adams St.

XUM

Line "WEEKS" LABELERS

STRAIGHT THROUGH ⟶ STRAIGHT THROUGH ⟶ STRAIGHT THROUGH ⟶ STRAIGHT THROUGH

DIFFERENT FROM ALL OTHERS IN LABEL APPLICATION

McDonald labeling machines do not employ any intermediate means for transferring a gummed label from the label magazine to the surface to be labeled. The magazine itself deposits the label on the package. Therefore, the labels are registered accurately and are applied in a straight, clean manner.

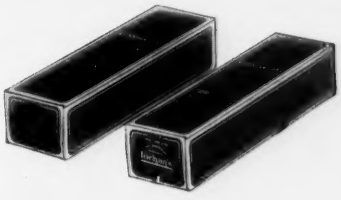
SINGLE LABELER

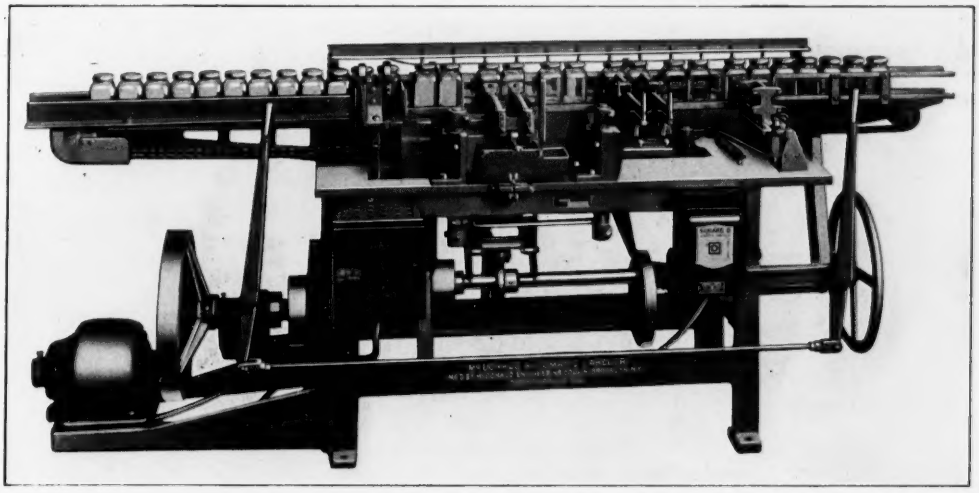
This machine applies spot labels on all packages, and one label on three sides. A neck label attachment may be added when desired. Speeds range from 30 to 80 per minute.

FRONT AND BACK LABELER

Applies two labels simultaneously on opposite sides or two labels all around the container, or one label if desired. Speeds range from 30 to 80 per minute.

DUPLEX LABELER—Is both of the above types but labels two containers or packages simultaneously without increasing the machine speed. It is two labelers in one and is a slow running, long-lived machine with a labeling speed up to 144 containers or 288 labels per minute. It is designed to keep pace with modern high speed cartoning and wrapping machines and eliminates the necessity of adding another labeler, another operator and additional floor space for doubling the production.





Duplex Labeler—Labels Two Containers Simultaneously

Why you find
NO SAMPLE
on this page

PATERSON Vegetable Parchment offers characteristics which are unique. But it comes in so many weights, sizes, tints, colors, and texture-effects that no sample presented here could possibly indicate its great adaptability.

Paterson Vegetable Parchment is entirely different from ordinary packaging papers.

It's insoluble . . . cannot be dissolved in water . . . never goes to pieces . . . can be drenched for years without the slightest disintegration.

Also, it's thoroughly grease-proof. Wherever grease is present, there is also moisture . . . and this double-protective feature of Paterson Vegetable Parchment is unique.

Paterson Vegetable Parchment can be printed in fast-color inks . . . to give highly artistic and beautiful results.

INVITATION. **Drop us a line, on your company letterhead. Our representative will call at your convenience to talk over your packaging problem. Then, if Paterson Vegetable Parchment with its double function of protection and sales-appeal, clearly fits your need, he will cooperate in helping you select just the right weight, just the right tint, just the right texture, and just the right printing results. Paterson Parchment Paper Company, Passaic, New Jersey. Sales Branches: Chicago, Ill., San Francisco, Cal.**

Patapar

Reg. U. S. Pat. Off.

THE POPULAR NAME FOR PATERSON VEGETABLE PARCHMENT

XUM

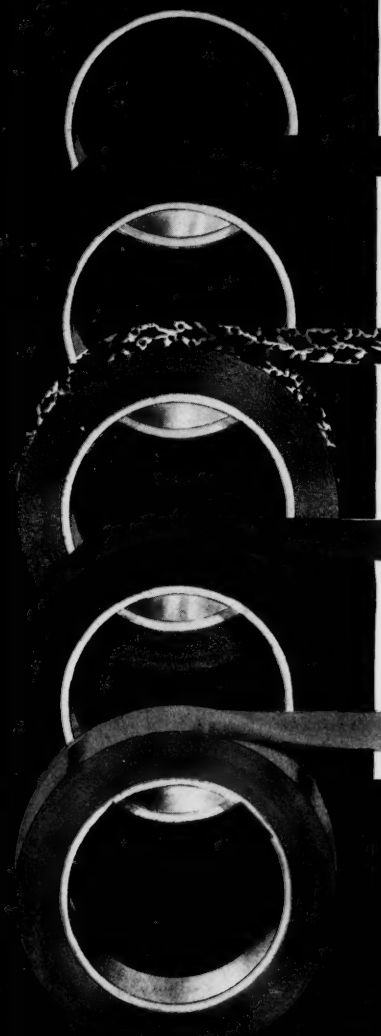
YOUR PRODUCT WILL DOMINATE

if wrapped in

Cellophane

and sealed with

SCOTCH CELLULOSE TAPE



The Positive Seal

For Plain or Moisture-proof Cellophane

Requires No Moistening

Instantly Adhesive

Scotch Cellulose Tape is the natural transparent seal for Cellophane Wrapped Packages.

It is also available in the following attractive colors: white, gold, silver, light green, dark green, orange, red, wine, light blue, dark blue, and black, which, used singly or in combination, will attract the buying eyes of many additional customers and increase the sale of your product.

- Samples and further information upon request.

Made and Patented in U. S. A. by

MINNESOTA MINING & MANUFACTURING COMPANY

SAINT PAUL, MINNESOTA

PATENT NO. 1760820, NO. 1814132, RE. NO. 17760. OTHER PATENTS PENDING.

...THIS is the *Improved* Metal Edge Method of Packaging

METAL EDGE is more than the strongest paper box known. It is a radically different packaging method. By it, manufacturers assemble their own boxes as needed, as a routine step in the production process. Box "flats", already shaped and printed, are supplied. The corners are securely joined with metal edging on a stayer like that shown below. An unskilled operator can quickly learn to assemble up to 5,000 boxes or more in an 8-hour day.

Many nationally known concerns profitably use the Metal Edge packaging method. A complete Portfolio, sent on request, explains how and why. Write for it.

Improved Metal Edge Gives You These Seven Packaging Advantages

(1) ELIMINATES DELAY in shipments, by making users independent of outside sources of supply for boxes.

(2) REDUCES INVENTORIES. Made-up boxes cost real money. The investment in Metal Edge "flats" is comparatively insignificant. Keep the difference in productive channels.

(3) SAVES 80% to 90% of the space required for storage of an equal number of made-up boxes. As a rule, takes even less storage room than folding boxes.

(4) BOXES ALWAYS FRESH, with maximum sales appeal, because made up only as needed for use. There is no "spoilage" and waste.

(5) HAS PERMANENT ADVERTISING VALUE. Colorful, sturdy Metal Edge boxes have the quality atmosphere that makes friends.

(6) SIMPLE AS A B C. Any worker about the plant can assemble Metal Edge boxes, profitably using time that might otherwise be wasted.

(7) AND STRONGEST KNOWN among paper boxes is the Metal Edge—conclusively proved so by scientific test.

Taken together, these and other Metal Edge advantages account for the greater satisfaction reported by box users over other packaging methods.

THE IMPROVEMENTS

Originated in 1887, the Metal Edge method has been continuously developed to its present state of near-perfection. The past few years for example have seen the introduction of a new deep-pronged metal stay that grips the board firmly; an exclusive quality Super-Fibre box board; multi-color printing of "flats"; attractive colors in both the box board and the stay; a package engineering service to study your requirements and make money-saving recommendations; a designing service to get the maximum sales-appeal into your boxes.

SEND FOR THIS PORTFOLIO OF PACKAGING!

Modern, good-looking, interesting—it is a terse presentation of developments in packaging. If you use, or even contemplate the use of paper boxes you owe it to your business to read this brochure. Sent without cost or obligation, if requested on your business letterhead.

NATIONAL METAL EDGE BOX COMPANY

330 North 12th Street
Philadelphia, Pennsylvania

THE METAL EDGE STAYER

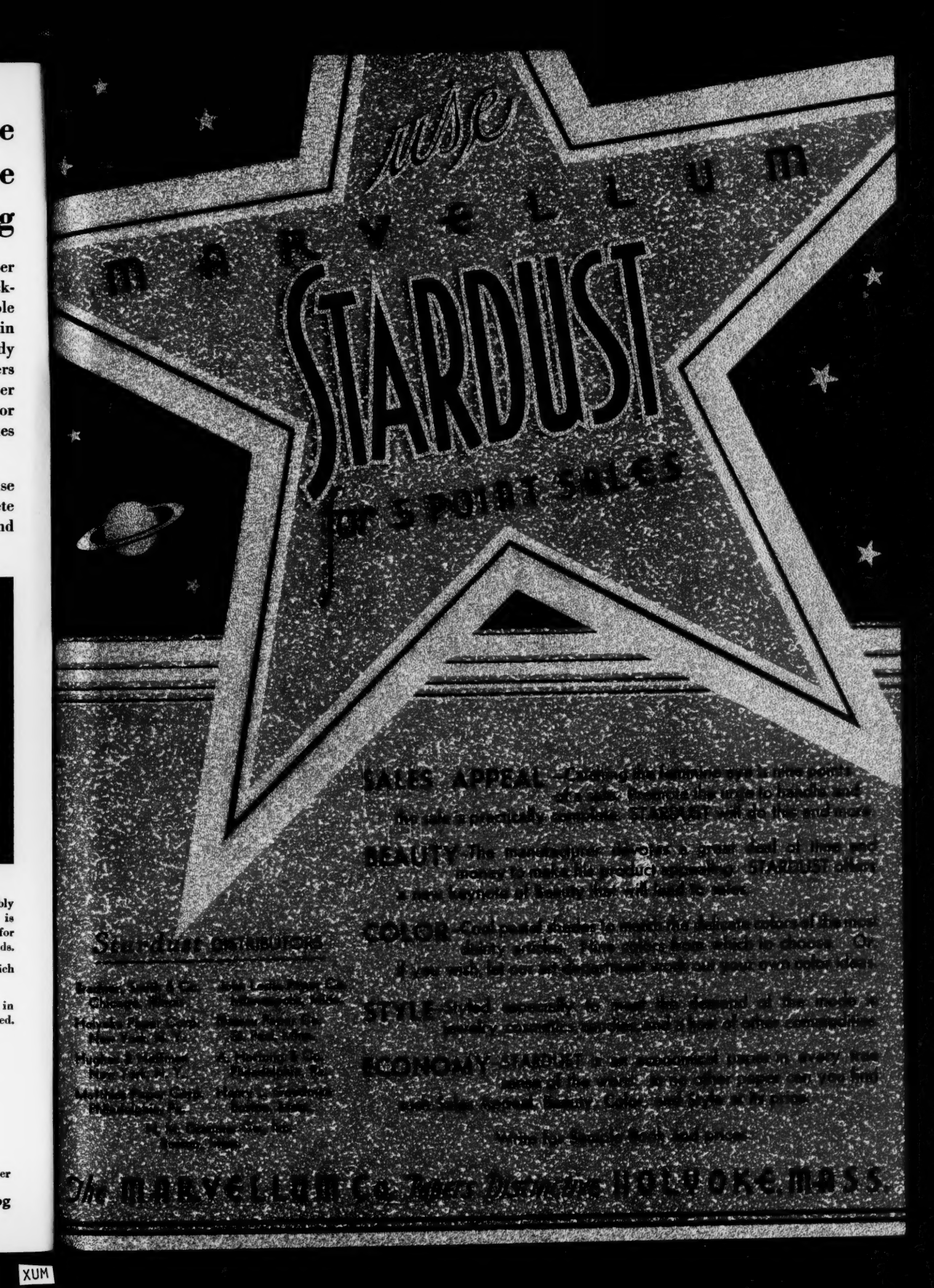
The Stayer for Metal Edge box assembly occupies only 2′ x 3′ floor space and is equipped with a ¾ h.p. motor. A change for size of box requires less than 30 seconds.

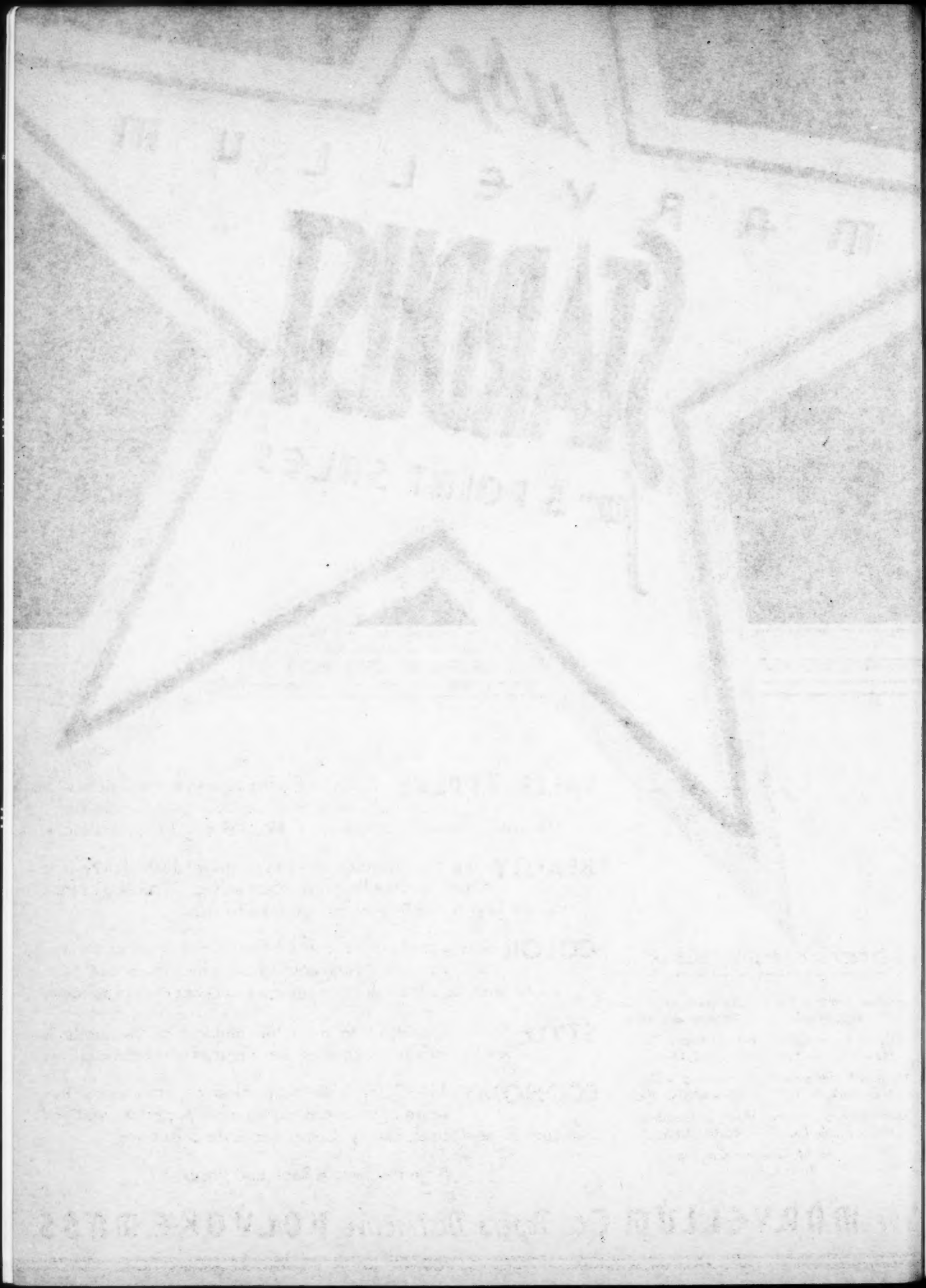
The Metal Stay is supplied in reels which are affixed in only a few moments.

Metal Edge box "flats" are supplied in bundles, separately wrapped and labelled.

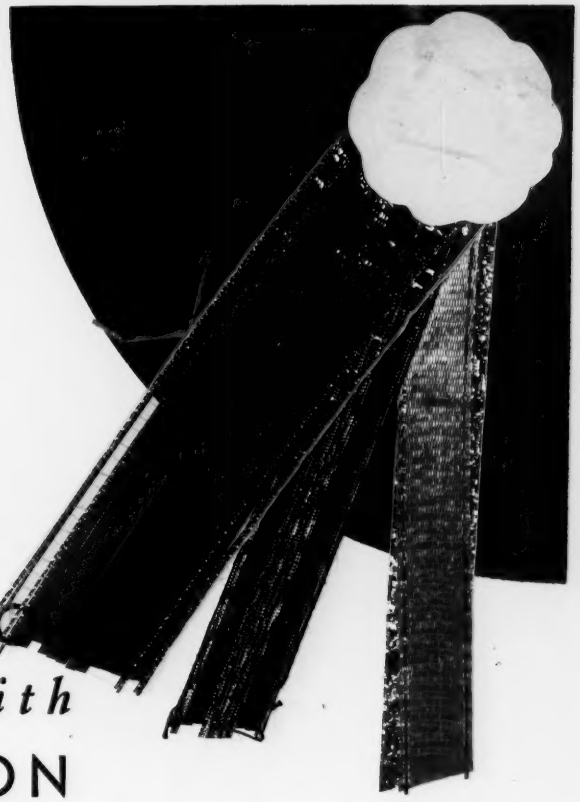
AMONG METAL EDGE USERS

Armour & Co.
Armstrong Cork
Carborundum
Disston
Ford Motor
Frigidaire
Garlock Packing
General Motors
Hercules Powder
Hyatt Bearings
Johns-Manville
Kelvinator
Packard Electric
Remington-Rand
United States Rubber


marvellum
STARDUST
for 5 POINT SALES
SALES APPEAL
BEAUTY
COLOR
STYLE
ECONOMY
Stardust DISTRIBUTORS
The MARVELLUM Co.
HOLYOKE, MASS.



XUM



GIVE SPARKLE *and* COLOR
to your package with
NATIONAL RIBBON

No matter what the color scheme of your package may be, there's a National Ribbon of the correct color, or combination of colors, to harmonize perfectly with it—and greatly enhance its appearance.

National Ribbons are made in a wide range of sizes from a wide variety of materials, and in hundreds of different designs and colors from which to choose.

Send us one of your packages and we will return it with a number of suitable ribbons and suggestions for the most effective manner of tying them.

Samples and full particulars gladly mailed on request.

Metal Ribbons
Gauze Ribbons
Rayon Ribbons
Cellophane Ribbons
Gift Wrap Ribbons
Tinsel Cords
Fancy Cords

NATIONAL TINSEL MFG. CO.

Factories
Manitowoc, Wisconsin
Los Angeles, California
Toronto, Canada

Sales and Executive Offices
Manitowoc, Wisconsin

XUM

The famous "Captive Cap" which cannot get lost—exclusive with National Tubes

Manufacturers of nationally advertised products know the importance of using tubes that are not only attractive in appearance, but satisfactory throughout the use of their products by the consumer. And they know that they are assured of tubes that possess these important sales-building qualities—when they standardize on National Tubes.

The exceptional quality of National Tubes is the result of the unusually high manufacturing standards of every department in our organization—from the handling of the raw material to the delivery of the finished tubes. If you have a product that can be put up in this popular form of container, take advantage of our long experience in the production of tubes and let us work out all the details—size and type of tube, style of closure, character of decoration, etc.

NATIONAL COLLAPSIBLE TUBE CO.

Providence, R. I.

New York Office—331 Madison Avenue, Telephone Murray Hill 2-1626

NATIONAL COLLAPSIBLE TUBES

A reproduction from an old Italian Miniature

If a product is worthy of a name then too it is worthy of sufficient publicity and advertising to make known its quality its uniformity its identity and its real value to the public.

MICHIGAN LITHOGRAPHING COMPANY

GRAND RAPIDS MICHIGAN

COPY • PLANS • ART • DIRECT ADVERTISING • DESIGNING • LITHOGRAPHING

XUM

AN APPRECIATION!

BECAUSE of the high quality of Intensograf reproductions the Michigan Lithographing Company have been awarded the contract for producing by Intensograf the covers for Modern Packaging for 1933.

Modern Packaging is one of the finest publications in America. All the production excepting the covers and special inserts, is done in or near New York City — their publication home. It is with a happy sense of pride, therefore, that we acknowledge the appreciation shown this new process in this awarding of the contract to us.

Intensograf is recognized as the highest type development yet reached in the graphic arts, and its acceptance in so important a work as these covers evidences its acceptance by such masters of the craft as the Breskin & Charlton Publishing Corporation.

This Intensograf service is open to you, too. An inquiry will bring you all the particulars.

Michigan Lithographing Company
Grand Rapids, Michigan

XUM

Orpco Master Displays

INDIVIDUAL DESIGNS BUILT ON THE MASTER PRINCIPLE
FOUNDATION ARE MADE FOR EACH CUSTOMER

BUILT ON SUSPENSION PRINCIPLE

NO PARTS TO DROP OUT

PATENTED

TRAY TYPE

They Have No Equal
As Sales Stimulators and
Dealer Aids

FOR—
ECONOMY
STRENGTH
DURABILITY
SIMPLICITY
VARIED USES

THE ORPCO MASTER DISPLAYS ARE LEADERS

SAMPLES AND FULL INFORMATION FURNISHED ON REQUEST

We also manufacture a complete line of regular Corrugated Paper Products, Shipping Cases, Liners, Sheets, Fillers, Die-Cut Parts

Ottawa River Paper Co.

TOLEDO, OHIO, U. S. A.

ETCHWOOD AND ETCHMETAL

. . . offer New Beauty

For the merchandiser who is looking for something different in consumer presentation, Etchwood and Etchmetal offer new Beauty for his product. « « Effectively used as sales stimulators, these modern containers are made of either metal or wood with designs etched or carved in bold relief. Designs are many and varied, and scores of pleasing shapes, sizes, and colors can be combined for masculine or feminine favor. « « Prices are remarkably low because of unusual production facilities. « « Let us submit our suggestion for packaging your product in Etchwood or Etchmetal

THE PILLIOD CABINET CO., SWANTON, OHIO

ESTABLISHED 37 YEARS

XUM

THE DAY OF THE
Drab IS GONE›››

THE DAY OF
Color IS HERE›››››

Bottled Products Need Color too!

GIVE the buying public what it wants. That, after all, is the secret of increasing sales for any product. And manufacturers in many lines, from cameras to lamps, from furniture to typewriters, have found that what the public wants, what increases their sales, is dressing up their products with COLOR.

But how can you give your product a more colorful, a more modern, a more attractive appearance? That's easy. Put it in a bottle or jar of Maryland Blue. The brilliant blue catches the customer's eye. Suggests the quality of the product within. Makes the product easily identified. Serves as a reminder to buy.

It will cost you nothing to see how much better your product will look dressed up in Maryland Blue. Let us send you samples. Maryland Blue Bottles are made in a wide variety of stock shapes and sizes, as well as in special designs for many famous products.

In requesting samples, tell us the nature of your product and the sizes in which it is packed. Or, better still, send us samples of your present containers.

MARYLAND GLASS CORP.
BALTIMORE, MARYLAND

New York Representative:
Two-Seventy Broadway
New York City

Pacific Coast Representative:
Owens-Illinois Pacific Coast Co.
San Francisco

Maryland Green Tint and Flint Bottles are of the same high quality as Maryland Blue

MARYLAND *Blue* BOTTLES

XUM

PACKING MATERIALS DIVISION OF

PIONEER PAPER STOCK COMPANY

422 WEST OHIO STREET, CHICAGO, ILLINOIS

Myracol PAPER EXCELSIOR

GIVES HIGH EFFICIENCY PROTECTION

Unusually resilient, Myracol Paper Excelsior protects against breakage in shipment and handling. Odd-shaped products are made safe, easy and economical to pack.

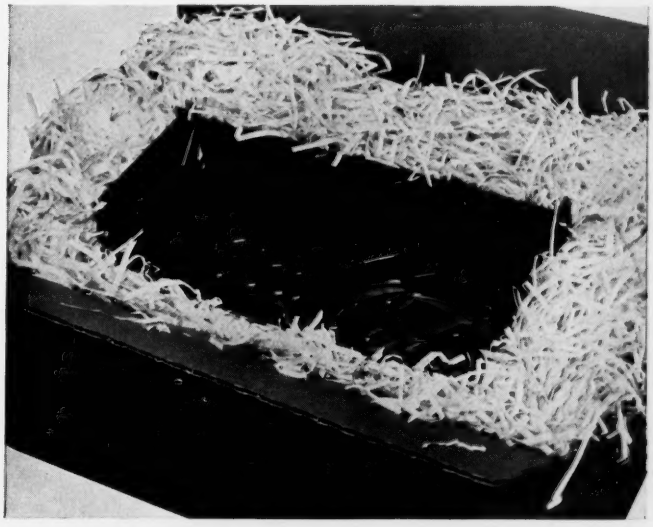
For packing all manners of products—from glassware and pewter to cosmetics—from premium hams to confections—Myracol adds class and eye appeal.

White or sparkling colors—in glistening cellophane, tissue or downy "moss." Myracol is different, fresh. It can give a new touch to many an old product.

Some manufacturers pack in Myracol that can then be used by their retailers for window and case display.

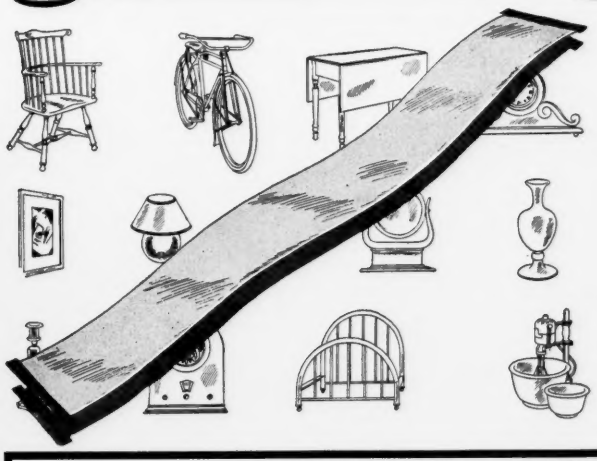
Seasonal Myracol is made in a wide range of colors for application—such as rich green and purple for Easter, red for Decoration Day, red and green for Christmas, etc.

Send for a sample assortment—and the price list that shows how little this class product costs.



Fragile Neon Sign arrives in perfect condition after 3 to 5 times normal trip—packed in Myracol

Seelpad



THE NEW PACKING PAD—CLEANER —SOFTER—SEALED AT ENDS

Though relatively new, Seelpads have made a big showing in the packing field—they have so *many* advantages.

Pads are sealed at the ends—securely. Packing can't leak out. Myracol paper excelsior is the packing—soft, resilient. It won't scratch any surface.

Seelpads protect easily marred finishes—protect fragile articles against shipping shocks. They do a *double job.*

Another big advantage is their flexibility—which means faster packing—messy, split pads can be avoided. Best of all—Seelpads are lower in cost.

That's hard to beat—better protection and appearance—easier handling—lower cost. Seelpads are virtually limitless in their use. Illustrated are just a few possibilities. Write for your sample of Seelpads. They won't fail to interest you.

OTHER PIONEER PRODUCTS

Shredded News
Overissue News
Corrugated Rolls
Fruit Wrappers
Shredded Oiled Tissue
Basket Caps

Send for Samples

Crepe Wadding
Yellow R.R. Tissue

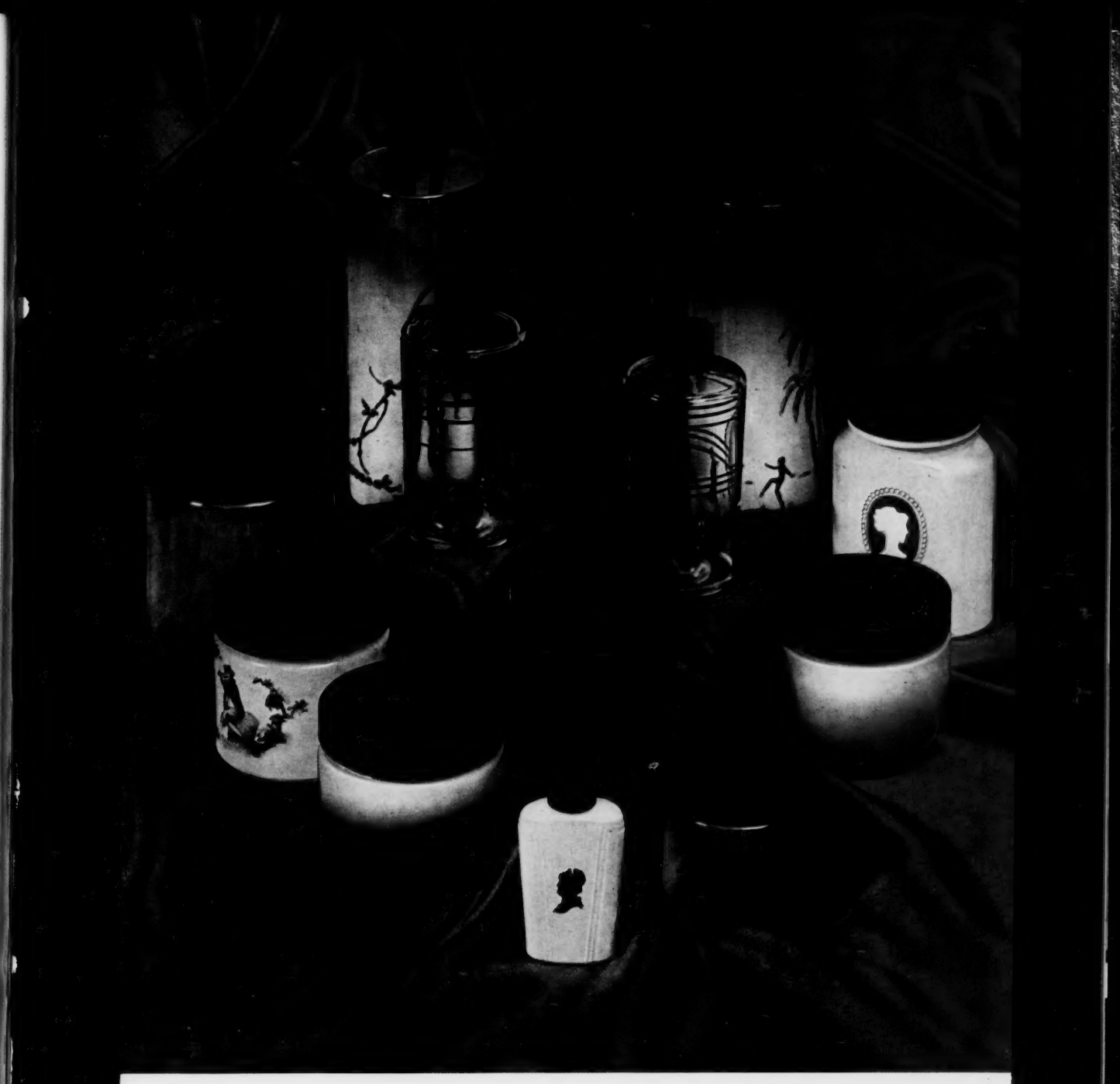
A FULL LINE OF SMART CLOSURES

The diagram shows how the outer shell of our Caseal Cap is smoothly rounded and interlocked at the bottom . . . an exclusive Caseal feature.

It is one thing to produce a complete closure service . . . covering the needs of every user of glass containers. *We do it.* It is quite another thing to produce a line of closures smart enough to cap the *smartest* packages on the market. *We do that too!* And we will be glad to show you . . . with samples . . . how we can help you to improve *your* packaging.

THE CLOSURE SERVICE COMPANY, TOLEDO, OHIO

XUM



WE HARNESS THE RAINBOW

All men experienced in packaging realize the importance of color as a stimulant to sales. When glass and color are used together the effect is particularly telling . . . But up to very recently, the cost of this combination has been prohibitive.

Thanks to a new *OnIzed* process, we are able to offer containers of intrinsic beauty in as many colors as the rainbow affords . . . harnessed to glass . . . to help the sales of your product. . . . . Owens-Illinois Glass Company . . . . Toledo, Ohio.

OnIzed CONTAINERS

OWENS-ILLINOIS GLASS COMPANY

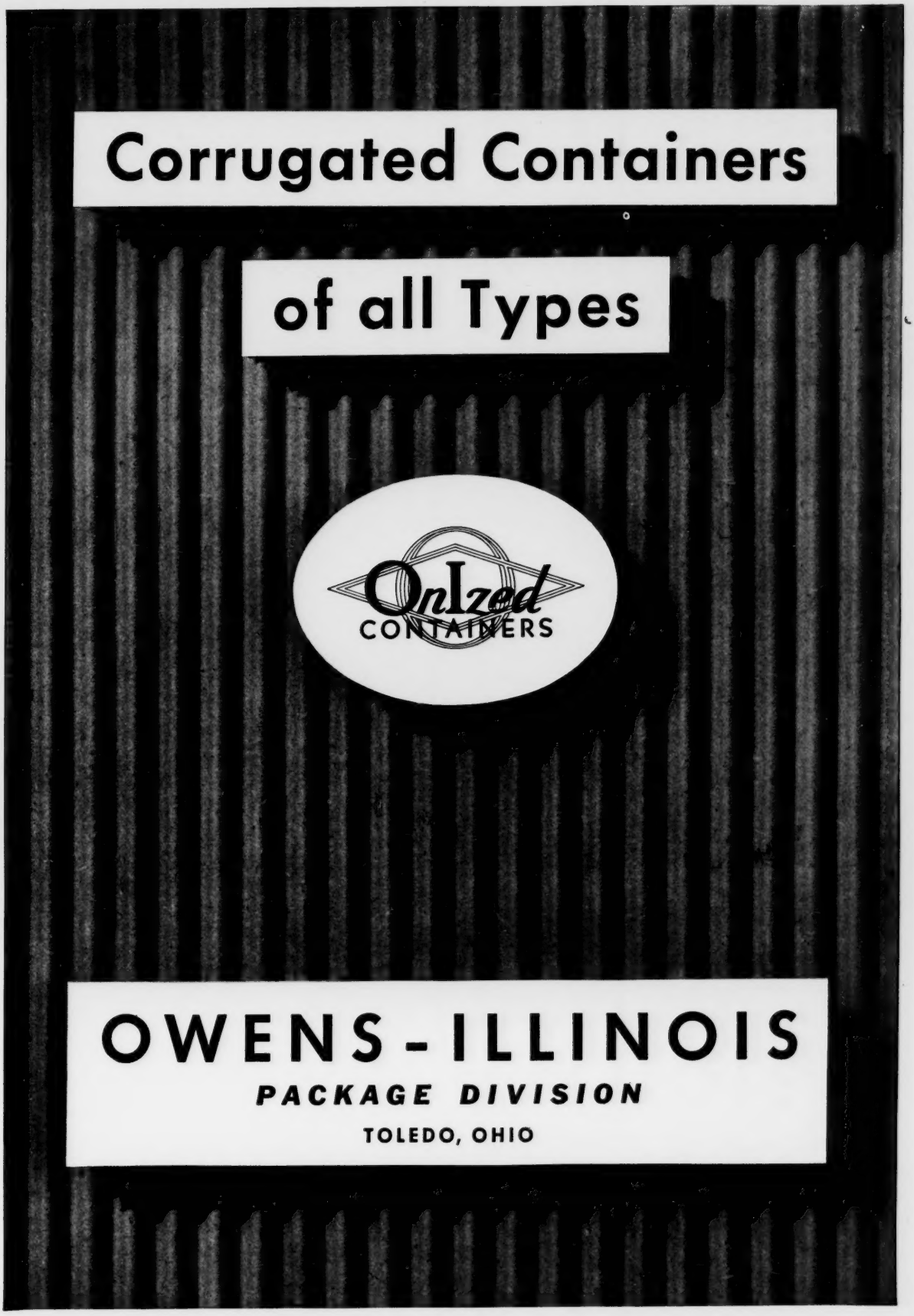
THE SPECTRUM IN GLASS

Competition of late has loaded unusual burdens on sales executives and on those who cooperate with them in the design of sales-making packages. Owens-Illinois is glad to help relieve these burdens with virtually an entire "spectrum" of applied color glass containers. The possibilities of this ware for intensifying eye-appeal and package identification are interesting especially with the effects obtainable by original label and cap treatment. . . . Owens-Illinois Glass Company, Toledo, Ohio.

OnIzed CONTAINERS

OWENS-ILLINOIS GLASS COMPANY

XUM


Corrugated Containers
of all Types
OnIzed
CONTAINERS
OWENS-ILLINOIS
PACKAGE DIVISION
TOLEDO, OHIO

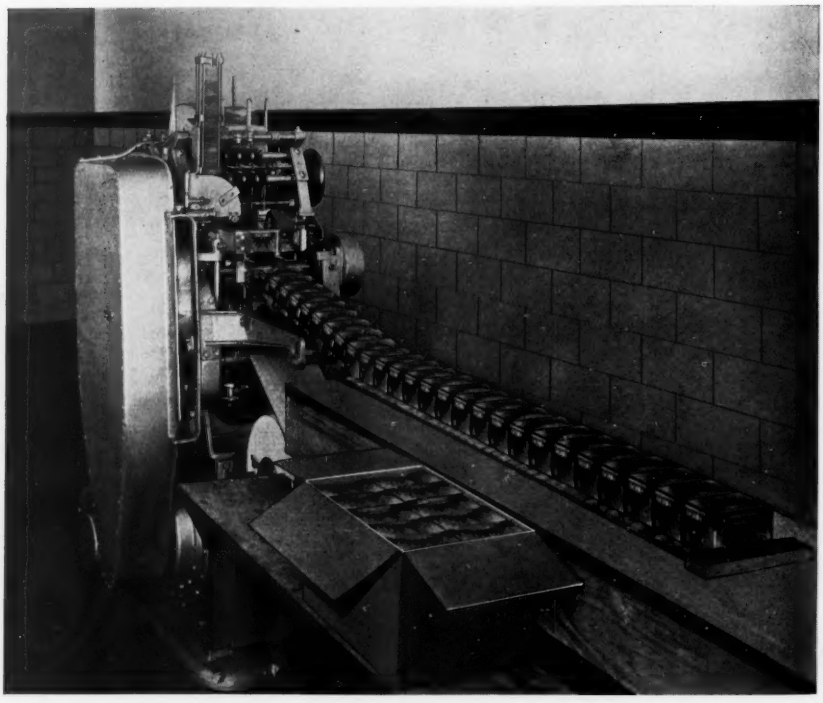
THE MORRIS PACKAGING EQUIPMENT CO.

Designers and Builders of

PACKAGING MACHINERY

TOLEDO, OHIO

MORPAC AUTOMATIC WRAPPING AND CARTONING MACHINES
MORPAC BUTTER PRINTERS . . . TUB CUTTERS . . . CONVEYOR TABLES . . . HAND-WRAPPING TABLES . . . AUTOMATIC FEEDING AND CUTTING MACHINES FOR PLASTIC MATERIALS . . . SPECIAL PACKAGING MACHINES TO ORDER.



Photograph, showing installation of "MOR - PAC" Wrapping and Cartoning Machine with coupon inserter.

This Machine wraps, cartons and inserts a color packet in each one-pound package of Oleomargarine. Producing sixty-five packages per minute.

Method
Offers
Reduced
Packaging Costs
Appearance
Cleanliness

RESULTS

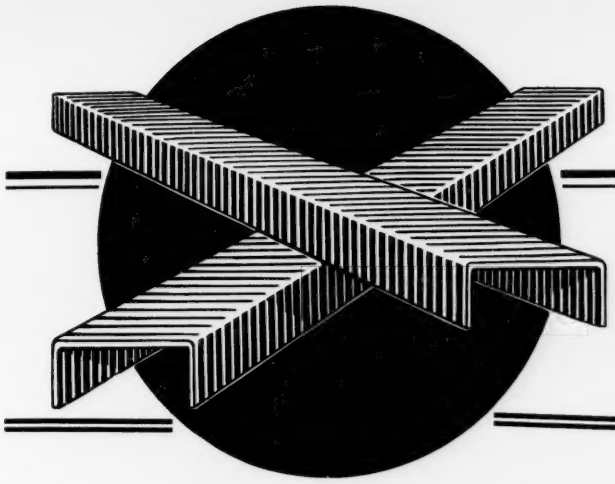
. . . . PERFECT PACKAGES

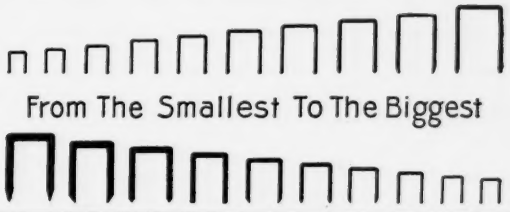
15 Years' Experience

designing and building automatic wrapping and cartoning machines makes it possible for us to furnish packaging equipment to meet the requirements of each individual purpose.

PACKAGING MACHINES FOR PLASTIC MATERIALS
BUTTER — OLEOMARGARINE — LARD — SOAP — CHEESE — PARAFFIN

LET US SOLVE YOUR PACKAGING PROBLEMS





FROZEN WIRE STAPLES

for all types of machines

Perfect stapling, speedily and economically done, is possible only when the staples are suited to the particular job.

Speed Fastener Staples are obtainable in every size and thickness, for every type of machine. In sharpness, penetrating power and uniformity of size and strength, they are unsurpassed.

Tell us fully about the kind of stapling work you do and the type of machine you use and we will send you a sufficient quantity of the right staples for testing purposes, without obligation.

For All-Around Hard-Usage Try the No. 7 Speed Fastener

The first steel and Chromium Stapling machine. Guaranteed to give you 7 years freedom from stapling machine trouble.

Wear-Proof, Rust-Proof, and cannot be clogged by use or abuse.

Descriptive literature and full information gladly sent on request.

Instantly changeable. Temporary and permanent clinch.

Adjustable paper guide.

PARROT SPEED FASTENER CORP.

388 Broadway NEW YORK, N. Y.

1. Machines which wrap cartons in printed wrappers, Cellophane, glassine, waxed paper, foil, printed transparent wrappers, etc.

2. Machines which wrap the product itself in printed paper wrappers, Cellophane, glassine, waxed paper, foil, printed transparent wrappers, etc.

Diversity

OUR wide experience in building wrapping machinery for a great variety of products, gives us a decided advantage in solving individual packaging problems.

It is impossible to show here the large number of machines in our line and the many forms of wrapping which they produce. Briefly, however, they fall into the following classifications:

(1) Machines which wrap cartons in printed wrappers, Cellophane, glassine, waxed paper, foil, printed transparent wrappers, etc.

(2) Machines which wrap the product itself in any of the materials mentioned above—candy bars, yeast cakes, cigars, razor blades, cake, soap, chewing-gum, etc.

(3) Combination carton-making, bag-making, weighing, filling and sealing machines for such products as coffee, tea, rice, sugar, etc.

(4) Bundling machines for enclosing cartons in bundles of dozen or half-dozen lots. Machine bundling is extensively used because it makes large savings over the cost of packing goods in cardboard boxes.

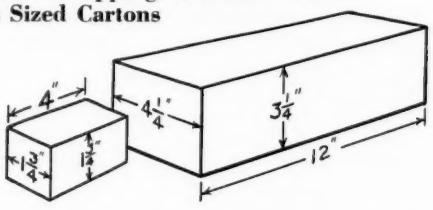
New Developments

We are constantly developing new forms of wrapping to meet modern conditions.

Electric Eye Wrapping *with printed Cellophane, Glassine, Waxed Paper.* This is a most recent development, Heretofore it was impossible to wrap a product by machine in a printed transparent wrapper, *with the printing properly registered on the package.* In machine wrapping, Cellophane, glassine and waxed paper must be fed from a roll—not in sheets. Therefore it was necessary to devise a cutting and registering device which would cut the wrapper from the roll so that the printed design would come in exactly the right location on the package. We accomplished this by designing a machine with an Electric Eye (photo-electric cell) which "watches" the printed design and actuates the mechanism that cuts the wrapper and places it around the goods.

Since the printing is right on the transparent wrapper, it is unnecessary to use printed paper wrappers, printed bands, or printed cartons for identification, as is the case when a plain transparent wrapper is used.

Adjustable Wrapping Machines for Various Sized Cartons



These machines are designed for manufacturers who desire to wrap a number of different sized cartons on a single machine. Our F-9 Model, for example, will wrap any variety of sizes within the following limits:

4" to 12" long; 1¾" to 4¼" wide; 1¼" to 3¼" high

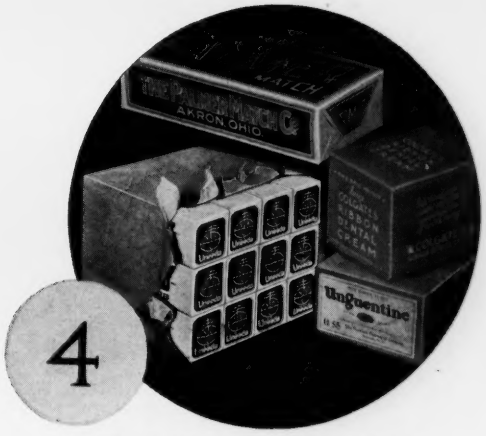
It is built for either roll feed or sheet feed. Registers the printed design on the package, and also attaches end seals, if desired.

Hesser Combination Carton-making, Weighing, Filling and Sealing Machines

This machine saves a large amount of floor space, because all the operations of making the package, weighing the product, filling and sealing are done by one compact

PACKAGE MACHINERY COMPANY
Over 200 Million Packages per day are wrapped on our Machines

3. Combination carton-making, bag-making, weighing, filling and sealing machines for such products as coffee, tea, rice, sugar, etc.

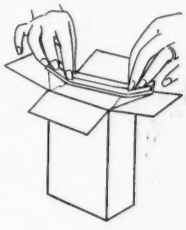


4. Bundling machines for enclosing packages in bundles of dozen or half-dozen lots. Machine bundling makes large savings over the cost of packing in boxes.

Our machines wrap an extremely wide variety of products in many different ways

machine. This does away with the necessity of using a number of separate units connected by long conveyors.

The Hesser Carton-making machine is built in two types. One model makes the carton from a roll of cardboard and encloses it in a printed wrapper, glued so that it adheres tightly to the carton. The other type makes the carton from printed carton stock, and inserts an inner container, which can be made of plain paper, glassine waxed paper or paper-backed foil. The top of this inner container is sealed by a unique accordion-fold, which enables the user to close the package securely again after some of the product has been used. When the carton seal is broken this inner container is not damaged.



The Hesser accordion container has such a perfect closure, and protects the product so effectively, that many concerns which formerly packed their goods in tins now use the Hesser Double-Pack. Coffee, for example, is being packaged in this way, using paper-backed foil for the inner container. The resultant package is more air-tight than a slip-cover tin, and costs considerably less.

Hesser Combination Bag-Making, Weighing, Filling and Sealing Machines

are used extensively for coffee—also for packaging rice, barley, gelatin, sugar, etc.

The machine first forms the inner bag, taking the paper from a roll. The outer bag, made of a printed sheet, is then formed separately about the inner bag. Finally, the machine transfers the bag to its filling and closing mechanism, which completes the packaging operation. Bags made in this manner cost considerably less than ready-made bags bought knocked-down and ready for filling.

Cellophane Seal for Milk Bottles

A new machine, which we perfected after a year and a half of experimenting, places a sanitary Cellophane seal on milk bottles—as shown here. The seal protects the cap and pouring lip from contamination. Being completely transparent, it allows all the cream to be seen. And it is much more easily opened than former seals. Unlike paper seals, the Cellophane will not become soiled or marred by handling. It is the most economical form of protection for bottled milk.

Over a Quarter of a Century's Experience at Your Service

The Package Machinery Company is a pioneer in the development of packaging machinery. Today, the great majority of package goods manufacturers use our machines. This established record of achievement is your surest guarantee of satisfactory service.

We will be glad to assist you in devising packaging methods for new products; in improving your present package; or in lowering your packaging costs. Get in touch with our nearest office.

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS

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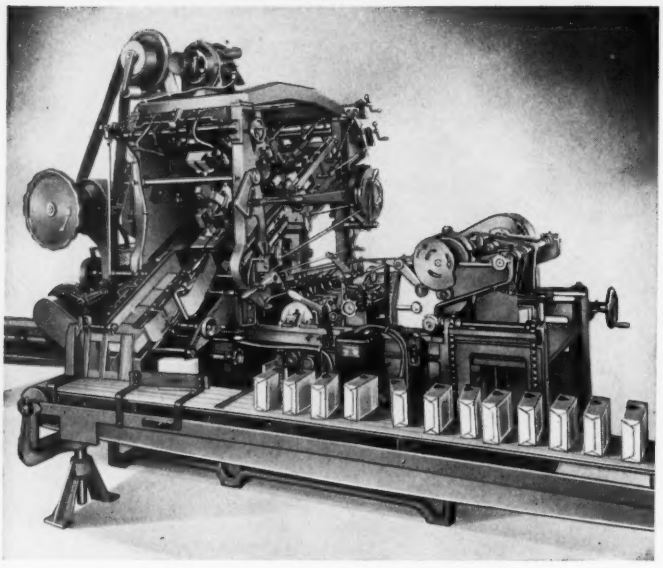


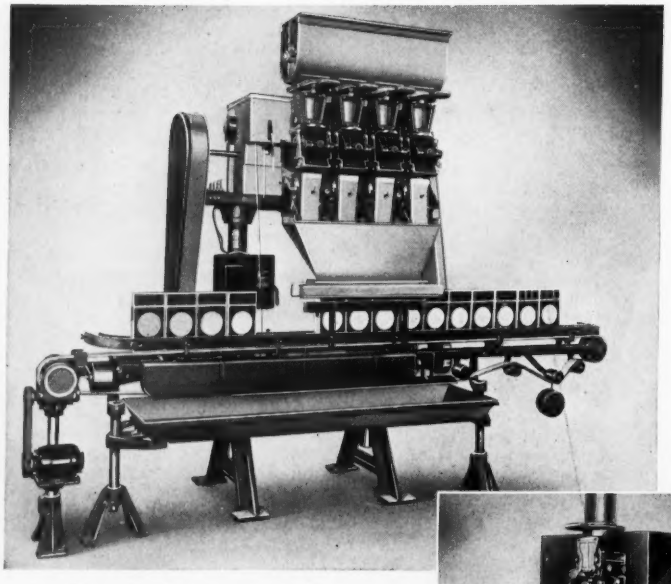
Hi-Speed Tight Wrapping Machine

Tight Wrapping provides the ultimate in protection to packaged products, particularly when the wrappers are applied by the Pneumatic method.

By using a straight-cut rectangular wrapper, a positive triple seal is obtained at each corner of the package. Unless these corners are properly protected the protective value of the tight wrap is lost.

Tight Wrapping is the most modern and efficient way of producing rectangular packages ever devised. Strength, economy in shipping, and unobscured surfaces for advertising are some of its advantages.

A range of machines for small or large packages is offered in the Pneumatic line.



Hi-Speed Net Weight Weigher

Weights and Measures Bureau Officials are very properly enforcing the laws governing correct weights in packages.

Full weight packages are necessary. Over-weights mean serious losses. This new type multiple net weight weigher assures accurate weights at a high speed. It is a standard machine with packers who demand quantity production, with a smooth, even, dependable operation.

Semi-Automatic Weighing Machines

This Net Weight weigher is designed to meet the demand for an inexpensive yet thoroughly accurate and reliable weighing machine.

The same proved and accurate principles used in our higher priced, high speed machines are used in this smaller unit.

To packers with comparatively small production, who demand positive operation and accuracy in weights, this weighing machine is recommended.

Machine is flexible and will handle several sizes of either rectangular or round containers.

More than 70 different types of standard packaging machines

For Dry Free Flowing Materials

(Fully and Semi-Automatic)

Carton Feeders
Bottom Sealers
Lining Machines
Weighing Machines
(Net and Gross)
Top Sealers
Wrapping Machines
(Tight and Wax)
Capping Machines
Labelling Machines
Tea Ball Machines

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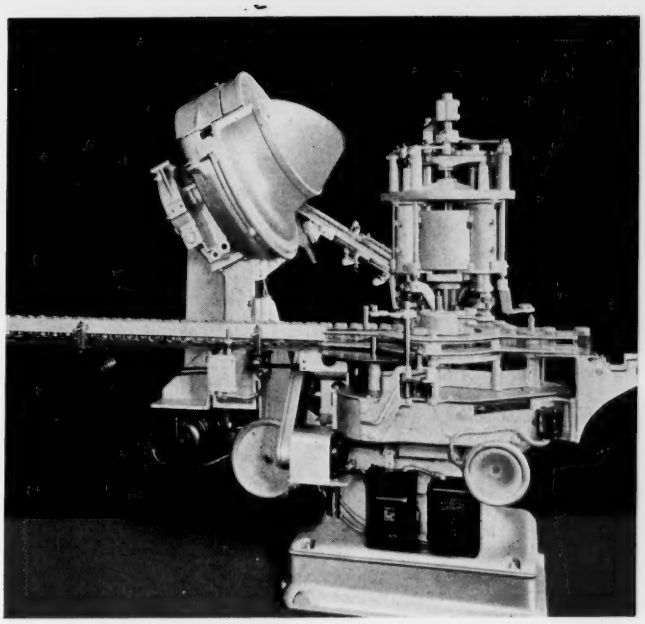
Pneu-Rotary Screw Capping Machine

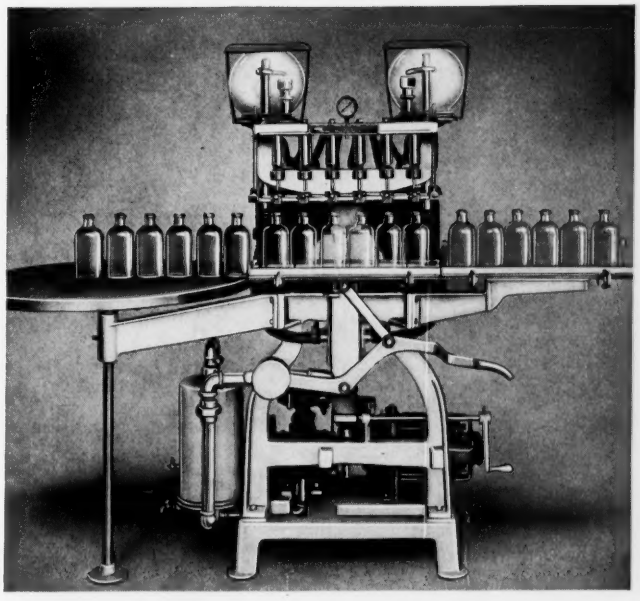
Our Pneu-Rotary Screw Capping Machine is designed to meet the modern changes in cap and glass design. It combines a flexibility sufficiently broad to handle a great variety of shapes and sizes, with a minimum of accessories, time and effort when making changes.

Fourteen years of practical experience building screw capping equipment is reflected in this modern capping machine, which establishes a new high standard of screw capping operation. This machine eliminates the "guess-work" and uncertainty usually accompanying screw capping operations.



Samco, Jr. Vacuum Filling Machine

The standard filling machine where outputs up to 40-per-minute are sufficient. Particularly useful where a number of sizes and a variety of materials are to be handled. Changes from one size container to another are simple, requiring from 10 to 25 minutes' time.



For Liquids and Semi-Liquids

Vacuum Filling Machines (for liquids or semi-liquids)
Automatic Capping Machines
Automatic Cap Feeding Machines
Automatic Corking Machines

PNEUMATIC SCALE PACKAGING MACHINERY

PNEUMATIC SCALE CORP., LTD., QUINCY, MASS. (NORFOLK DOWNS STATION)

Branch Offices in New York, 117 Liberty St.; Chicago, 360 North Michigan Avenue
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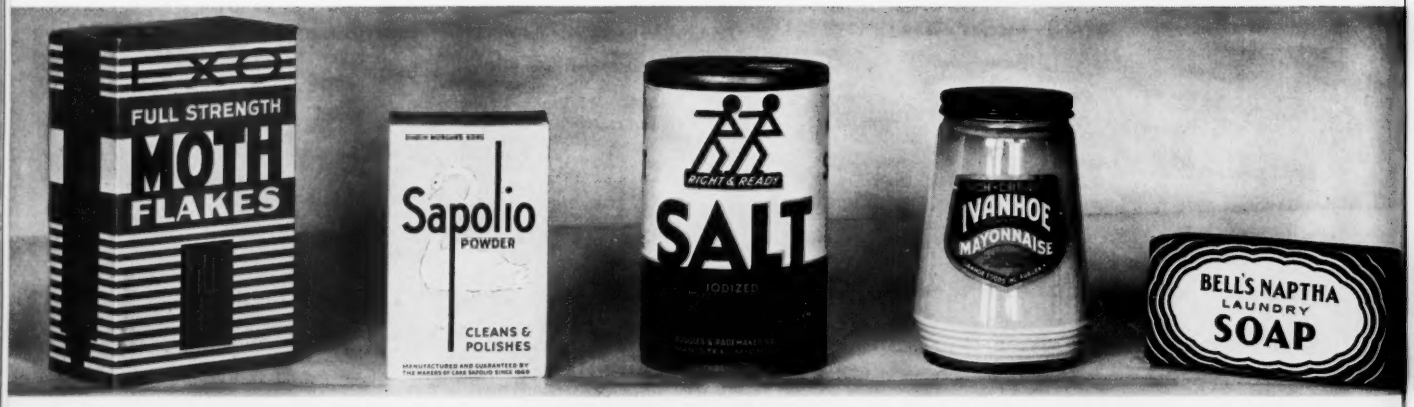
THE ONLY SOLUTION T



Reprint from "CLOSURE NEWS," Nov., 1932

Edwin H. Scheele has designed literally thousands of packages, most of them anonymously, for practically every commodity you can think of. In the early days of package designing it was hard to interest packers directly in better design, so the majority of his work was done with container manufacturers and lithographers. Thus Scheele's very substantial grounding in the mechanical production of all types of packages. Then, too, most redesigns in those days were executed to adapt the package to new types of machine filling or sealing. And if you don't think that takes the nonsense out of a man, try it some time.

All of which doesn't mean that Scheele is prehistoric. He's still a young man, and he finds himself a veteran in an infant profession at the age of most of the artists now leaping in—his early thirties. Perhaps this young-old combination accounts for the predominance of the ultra-practical in all his designs—and yet permits an element of freshness free of the Toryism of age. Anyway, his great familiarity with container production is one of the things that makes packers like to work with him, and the freshness and sparkle that creeps in is velvet—a result of honest functional design, says he. His modernism isn't the function-mad, stark-simplicity type, nor are his excursions into the classic realm busy and pedantic, if you get what we mean. It's all nicely balanced.

NTO A DESIGN PROBLEM

Find the Man!

The creation of a Package Design is a one-man job. Industrial Design is a profession and cannot be reduced to an exact science. Everything depends on the man, —his talent, judgment and experience.

We offer you the personal services of an industrial designer with 18 years' experience in designing packages to meet consumer acceptance. His experience and constant application of functional design to packages has earned the compliments conferred on us by various manufacturers who have delegated to us that important phase of their sales promotion problem—styling the product—designing the package.

It costs nothing to find out if we can cooperate with you. A letter outlining your package design problem will receive the personal attention of Edwin H. Scheele, President.

We design the complete package in its combined ensemble (i.e., everything that constitutes the presentation of the product to the consumer), or any part thereof. We determine the physical construction of the package as well as its shape and decoration, recommending materials and new methods of packaging where necessary and practical. We serve packers, manufacturers and agencies. We do not manufacture containers. Our complete package design service, or any part thereof, is available to you, at a cost commensurate to the service rendered.

PACKAGE DESIGN CORP.

425 FOURTH AVENUE • NEW YORK, N. Y.

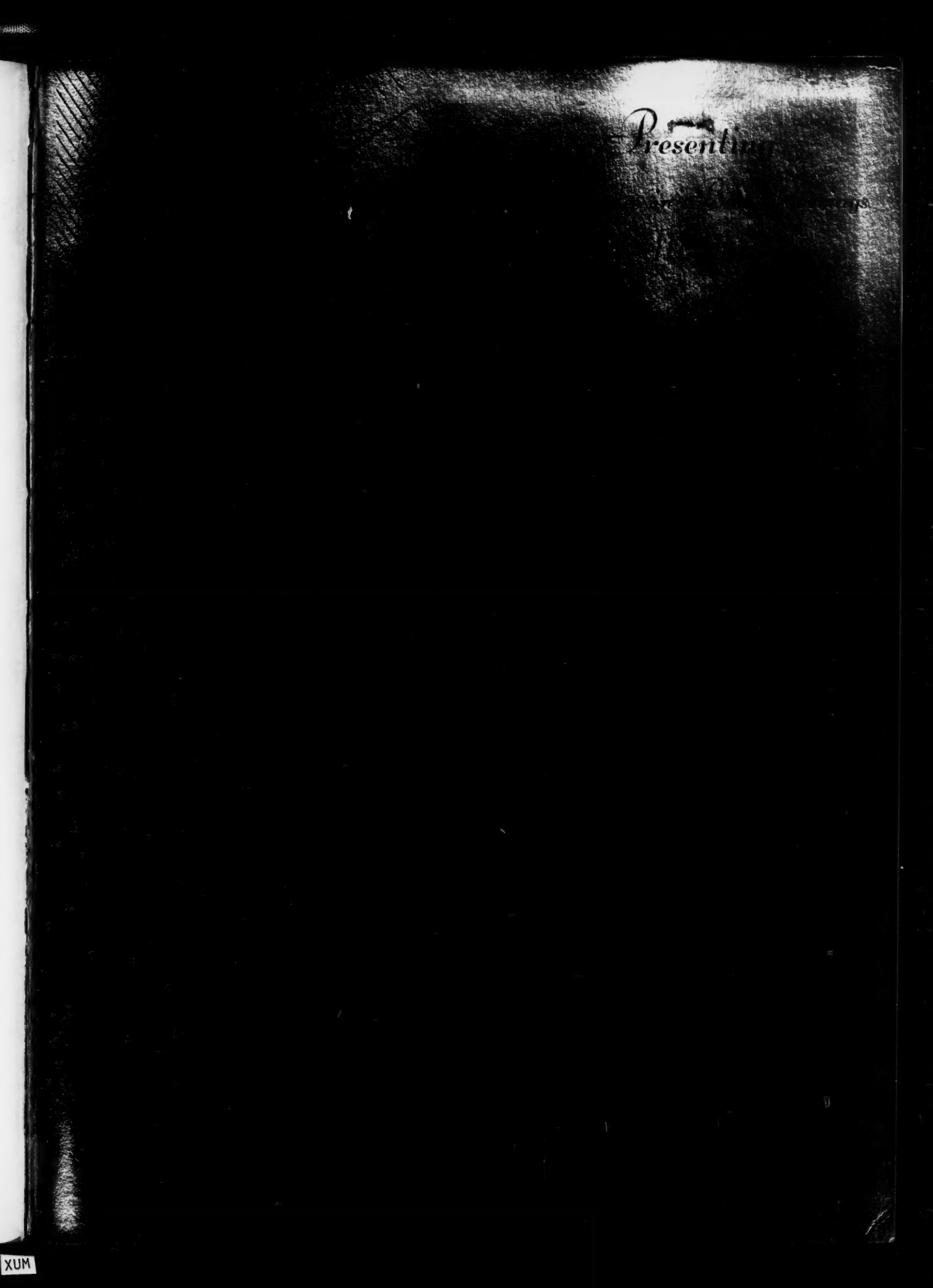
Why are the sales of LEPAGE'S COLD SOLUBLES increasing at such a rapid rate?

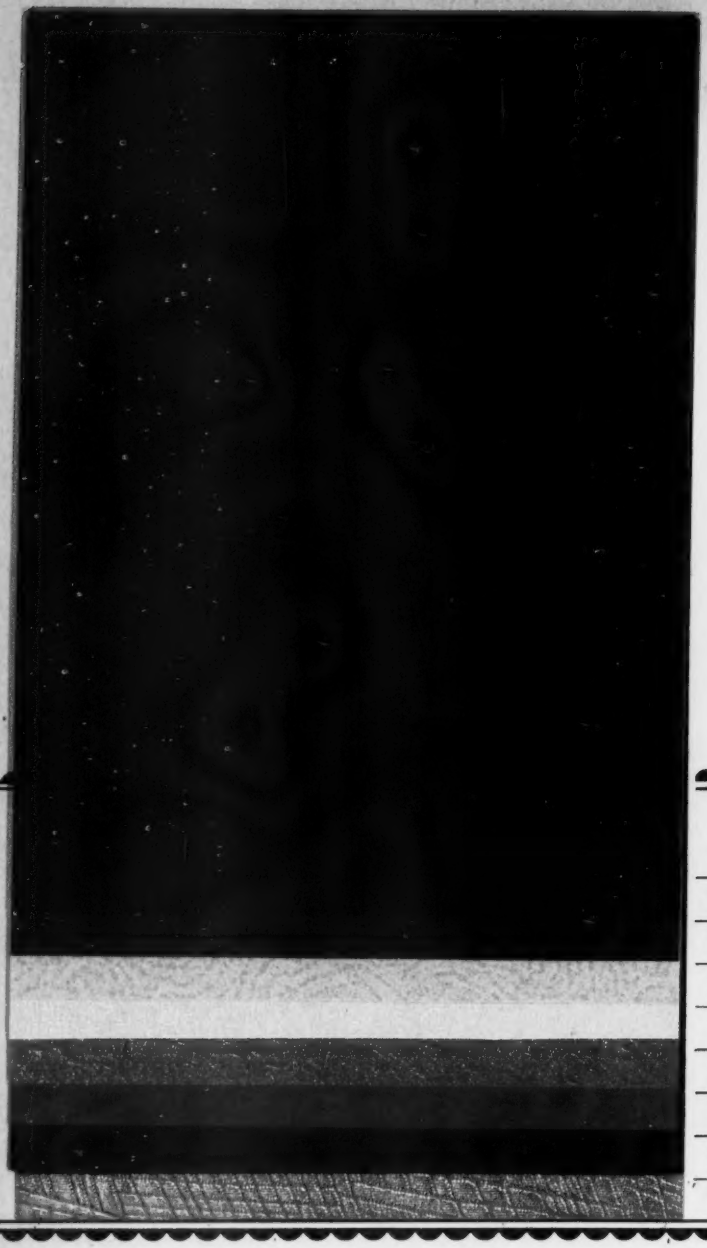
And Right Through These Trying Years

Because:

1. Economy—price and production.
2. Wider range of application than similar adhesives.
3. Practical application for machine work.
4. Proper qualities for adaptation on a given machine.
5. Cleaner and greater production—less shut-downs.
6. Once demonstrated—always used.
7. You take no chance or risk in trying it out.
8. Not an experiment—tried and proven. Ask for a demonstration.

RUSSIA CEMENT CO., Laboratories and Factory GLOUCESTER, MASS.


Presenting



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have been completely Restyled and Repriced by Middlesex.

Exquisite new embossed designs have been added, accurately reflecting today's decorative trends.

Authentically smart colors for 1933 have been selected by recognized style authorities.

Intriguing, modern finishes have been developed.

Beautiful MODE Papers will give your merchandise real sales help. They provide that certain "Style Appeal," so essential in selling today's alert public.

LINE	DESIGN	PRICES per Ream 20x26 in Rolls. 12 Reams or Over.
METAL-MODE	Hammered	$12.90
METAL-MODE	Plain Finish	12.90
GALA-MODE	Serpentine	3.90
VANI-MODE	Veneer	5.00
VANI-MODE	Lace	5.00
RICHMODE DUPLEX	Glazed Combinations	On Request
STANDARD EMBOSSED	Floral	3.85
METAL-MODE	Diagonals	7.25

Over 300 Distinctive Papers are STOCKED by MIDDLESEX for IMMEDIATE SHIPMENT.

These sampled here are typical examples of MODE Papers.

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MIDDLESEX PRODUCTS CO.
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Also send sample books of following lines.

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MIDDLESEX PAPERS

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XUM

PNEUMATIC AUTOMATIC PACKAGING MACHINERY

PNEUMATIC SCALE CORPORATION, LTD.

NORFOLK DOWNS . (QUINCY) . MASS.

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AUTOMATIC MACHINERY FOR EVERY PACKAGING PURPOSE

FILLING • WEIGHING
LINING • SEALING
LABELLING • WRAPPING
For ALL TYPES of
CARTONS, CANS & BAGS

PNEUMATIC SCALE CORPORATION, LTD.
NORFOLK DOWNS • (QUINCY) • MASS.

PACKAGING GOODS AUTOMATICALLY
The Pneumatic Way

•

ORIGIN AND DEVELOPMENT

CUSTOMS change in the methods of purchasing food, just as in everything else. Years ago it was considered thrifty for the head of the family to go to the store and buy supplies in quantity or bulk:—flour and sugar by the barrel, butter by the firkin, and such edibles as crackers, beans, rice, starch, tea, coffee, salt, spices, and many others, loose or by the pound.

And in the past such a method may have been economical and sensible. But times change. The old-time commodious kitchen, the large pantry with plenty of storage space, both are becoming extinct. So to a large extent is the cook herself.

In fact, the modern larder would be swamped by the vast quantities of foodstuffs our ancestors used to buy at one time. This is due in large measure to the fact that an ever-increasing percentage of the population of cities are living, not in spacious, separate dwellings, but in apartment houses where every inch counts. It has become automatically impossible to indulge in the habit of buying ahead a surplus of anything—from bird-seed to oatmeal, from crackers to cloves.

Nowadays the housekeeper finds it convenient, economical, and preferable, to purchase in small quantities.

Understanding this, the manufacturer and retail dealer met the demand by selling innumerable sorts of necessities and conveniences of life (ranging from cooked foods to cosmetics) in packages, cartons, and cans. In this way, the consumer is given the added advantage of procuring that exact brand which he prefers, knowing in advance precisely what he will get for his money.

How has this been made possible? The answer is simple:—through the invention and development of packaging machinery.

By such means the manufacturer can place at the disposal of his critical consumer the particular commodity desired. And he can be sure of having his product and its quality instantly recognized and appreciated. Thus this packaging machinery not only protects good will, it results in a positive advertising value impossible in the days when goods were sold in bulk with no recognizable mark.

These methods made possible by packaging machinery have also revolutionized commercial methods—to their improvement.

XUM

A Pioneer With Over Forty Years' Experience

FROM its earliest and simplest beginning it has developed its system by steadily meeting the ever-increasing requirements which naturally resulted from the expansion of the package goods business produced by the introduction of its earlier machinery.

Thus have come in response to distinct needs, and as a matter of logical growth, the various later operations that have given the system its present completeness.

In order to serve in reasonably quick time the ever-increasing demands prevailing for its production, this company has completed its ninth addition to its plant which has increased fourfold the floor space it previously occupied.

Its plant is up-to-date in every detail, the factory buildings being of reinforced concrete, equipped with new machinery of the latest and most approved types.

Among its customers are the largest producers in the country, the best known national advertisers, whose names are familiar in every home.

●

The Following Products Can be Handled Most Successfully by

PNEUMATIC PACKAGING MACHINERY

BARLEY-PEARL	HOMINY	RICE
BEANS	INFANT'S FOOD	SALT
BORAX	MACARONI	SALTS—EPSOM
BRAN	MOTH BALLS	SEED—BIRD
CEREALS	MUSTARD	SOAP CHIPS
CHOCOLATE & COCOA	NAPTHA FLAKES	SODA—BAKING
COCOANUT	NOODLES	SODA—BICARBONATE
COFFEE	PEAS—SPLIT	SODA—SAL
CORN MEAL	POULTRY AND STOCK REMEDIES	SPAGHETTI
CREAM OF TARTAR	POWDER—BAKING	SPICES
CRUMBS—BREAD	POWDER—FACE	STARCH
DRIED FRUITS & VEGETABLES	POWDER—JELLY	SUGAR
DRUGS	POWDER—PHOTO FIXING	SULPHUR
FARINA	POWDER—SOAP	TAPIOCA
FLOUR	POWDER—TALCUM	TEA
GELATINE	POWDER—TOOTH	VERMICELLI

NOTE: Machines seal cartons in which are packed Inner Tubes, Baseballs, Golf Balls, and other articles of such a character that cannot be weighed automatically. Can Capper can be used for applying lids to cans on goods that cannot be weighed automatically.

Suggestions for Procedure

WHEN DESIGNING CARTONS AND LABELS

for Machine Production

THE present tendency with manufacturers of packaged products, both dry and liquid, is to stress the design of their package in an effort to beautify the design and make it so striking that it will stand out from its competitors. Many of these designs are produced by artists of note, or perhaps by the advertising department.

Oftentimes, the artists or advertising men, capable in their particular lines, lose sight of the fact that the package designed, which will be produced in quantity by machine, must be held within certain limitations to permit of practical machine production.

Cartons with extraordinary broad panels are designed so that a larger advertising surface may be presented when the package is on the merchant's shelf. Consequently, the side panels of the package become too narrow to be handled rapidly by a machine. Elaborate designs in wrappers are produced. While beautiful in themselves, they do not permit of the accurate and rapid registering necessary when passed thru a machine.

The same thought applies, particularly, to modern bottle and jar design, many of them beautifully modernistic, but utterly impractical from a machine handling standpoint.

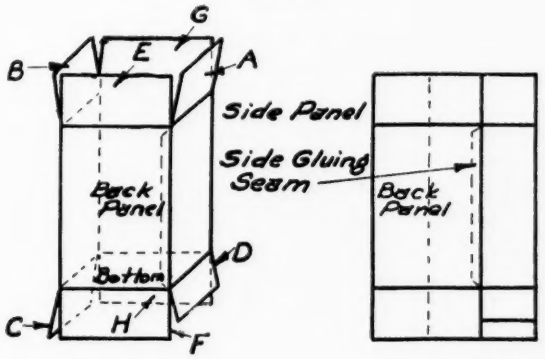
It is suggested that in every instance where a new package or wrapper is being considered that models of the new design be submitted to the manufacturer of the machine that must handle it so that the machine manufacturer can offer his suggestions and assure the user of the new design that his package, or wrapper is going to be practical from the machine handling standpoint.

The Pneumatic Scale Corporation maintains an advisory department for this very purpose. We will be very glad to have you utilize the service of this department, without obligation or cost. Send us samples of your packages or wrappers for our constructive suggestion.

CARTON CONSTRUCTION

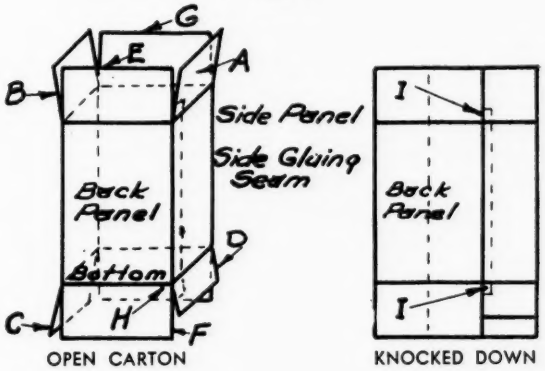
FOR HANDLING ON AUTO. CARTON FEEDER

No. 1



OPEN CARTON KNOCKED DOWN

No. 2



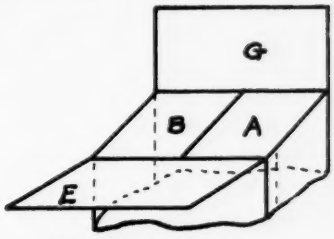
OPEN CARTON KNOCKED DOWN

No. 1 — REMARKS

This type of carton is recommended as being the best and most substantial for use on the carton feeder. The side gluing seam is part of the side panel and is glued to the back panel so that the entrance of the opening knife will not tear or rip the seam open.

No. 2 — REMARKS

In this type of carton, the side gluing seam is attached to the back panel and glued to the side panel. It also extends about 1/2" beyond score lines as shown at "I", Fig. 2, to prevent leakage of powdered goods at corner due to poorly made carton or insufficiently glued seam.



SEE NOTES 3 AND 4

No. 1. On the ideal carton, the width equals twice the thickness and the height between score lines is about 1-2/3 times the width.

No. 2. Printing should read so that top of carton will be as it is shown on drawing.

No. 3. Flaps A and B should not be long enough to overlap each other when folded in.

No. 4. Flaps A, B and C should not be longer than E, G and F, H.

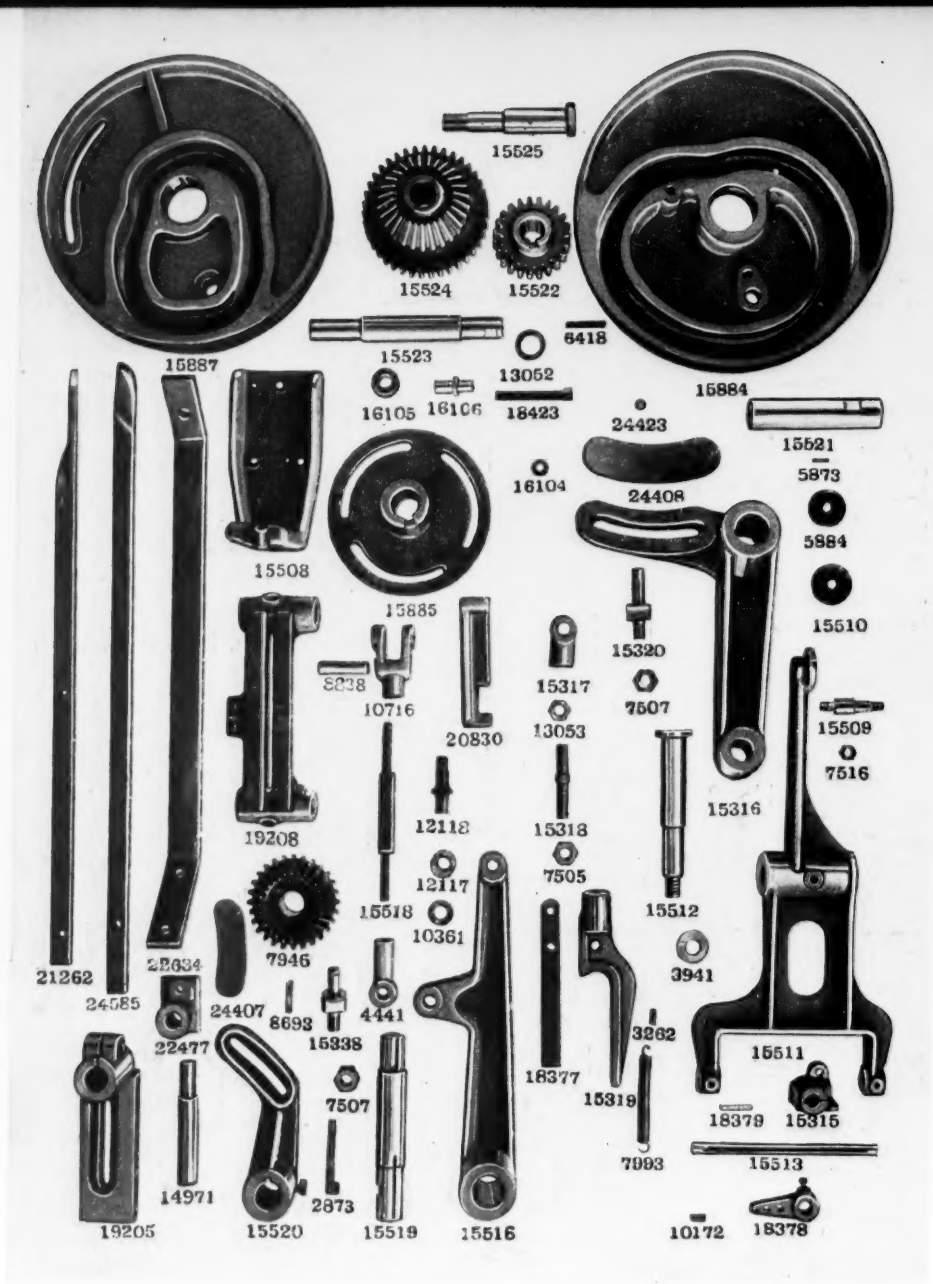
No. 5. Flap D should be 3/8" to 1/2" shorter than F and H.

No. 6. Flaps A, B, C, D, E and F should not be printed or have any ink on them whatever, as they have to take the glue for sealing and glue will not penetrate thru an inked surface. If it is necessary to have an inked margin on these flaps, it should not exceed 1/16" wide.

No. 7. The side gluing seam should extend 1/2" to 3/4" above score line. See "I".

No. 8. The width of the side gluing seam should be from 3/8" to 5/8", depending on size of carton.

No. 9. Grain of cardboard should run around carton, not up and down.



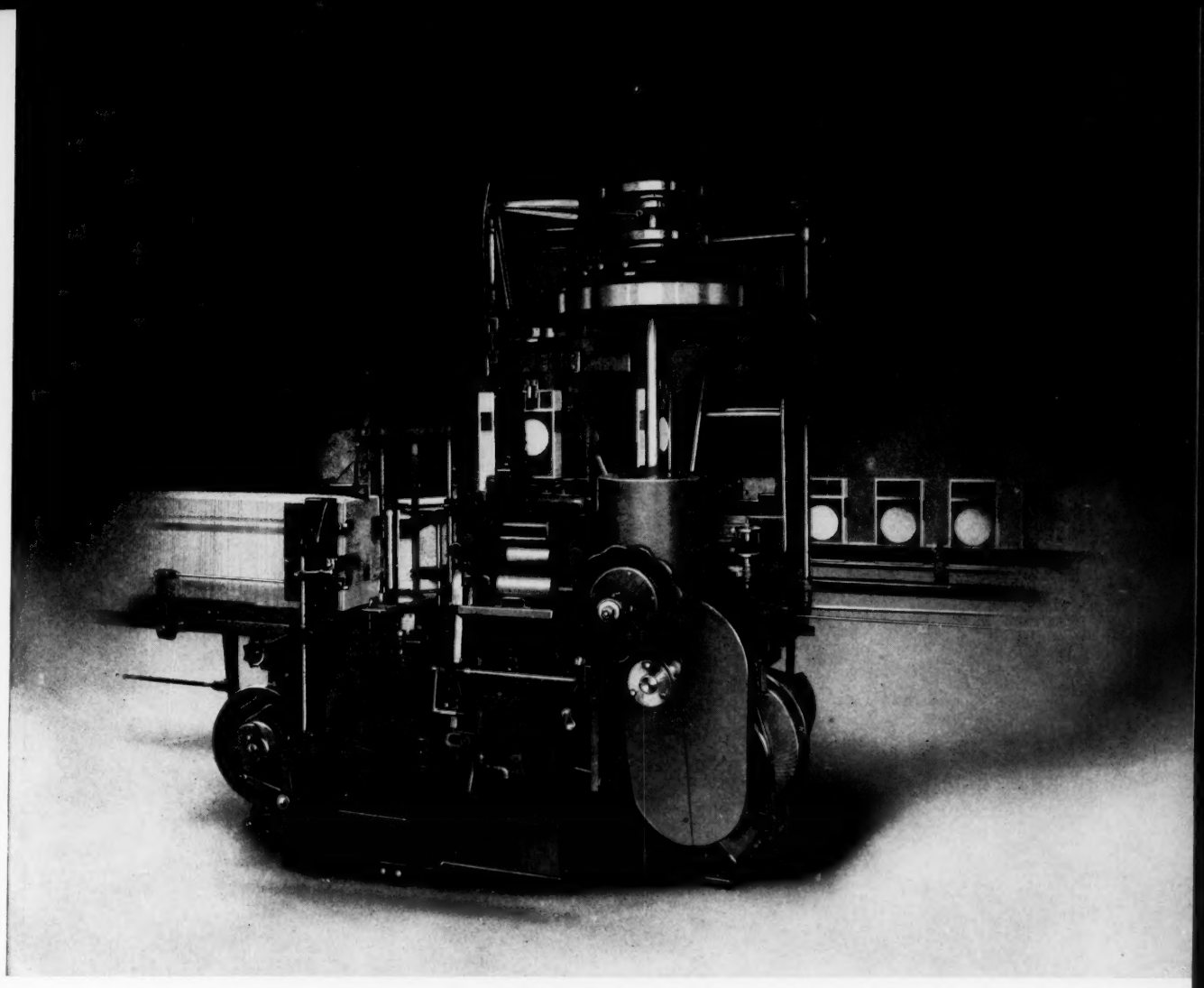
SAMPLE PAGE MACHINE PARTS CATALOG

A stock of over $400,000 worth of interchangeable jig made parts constantly on hand. All parts have numbers stamped on them, and a special Catalog of each machine, showing its parts and numbers, is furnished each customer for convenience in ordering by letter or telegraph. A sample page taken from our Machine Parts Catalog of Carton Feeder is shown above.

Technically trained field engineers are permanently located at strategic points in order that users of Pneumatic Equipment may be assured of prompt and efficient service.

Pneumatic Service means REAL service.

XUM



PNEUMATIC HI-SPEED BOTTOM SEALER

Class No. 1117

operating with

PNEUMATIC HI-SPEED CARTON FEEDER

Class No. 8213

SPECIFICATIONS

RANGE—Will handle cartons within the following sizes:—

Minimum—1" thick, 2" wide, 3¼" high (between score lines)

Maximum—3¾" thick, 6¼" wide, 9¼" high (between score lines)

Note: Minimum and maximum sizes cannot be handled on the same machine.
Highest operating efficiency obtained when number of sizes limited to four.

EQUIPMENT—Cost of machines includes equipment to handle one size package. Equipment for additional sizes extra.

SPEED—60 packages per minute.

FLOOR SPACE—(including Hi-Speed Bottom Sealer and Carton Feeder) 13'5" x 5'.

OPERATOR—No operator required. Attendant only to replenish reservoir of Carton Feeder twice an hour.

WEIGHT—Carton Feeder—from 2200 to 2300 lbs.
Bottom Sealer —from 4300 to 4500 lbs.

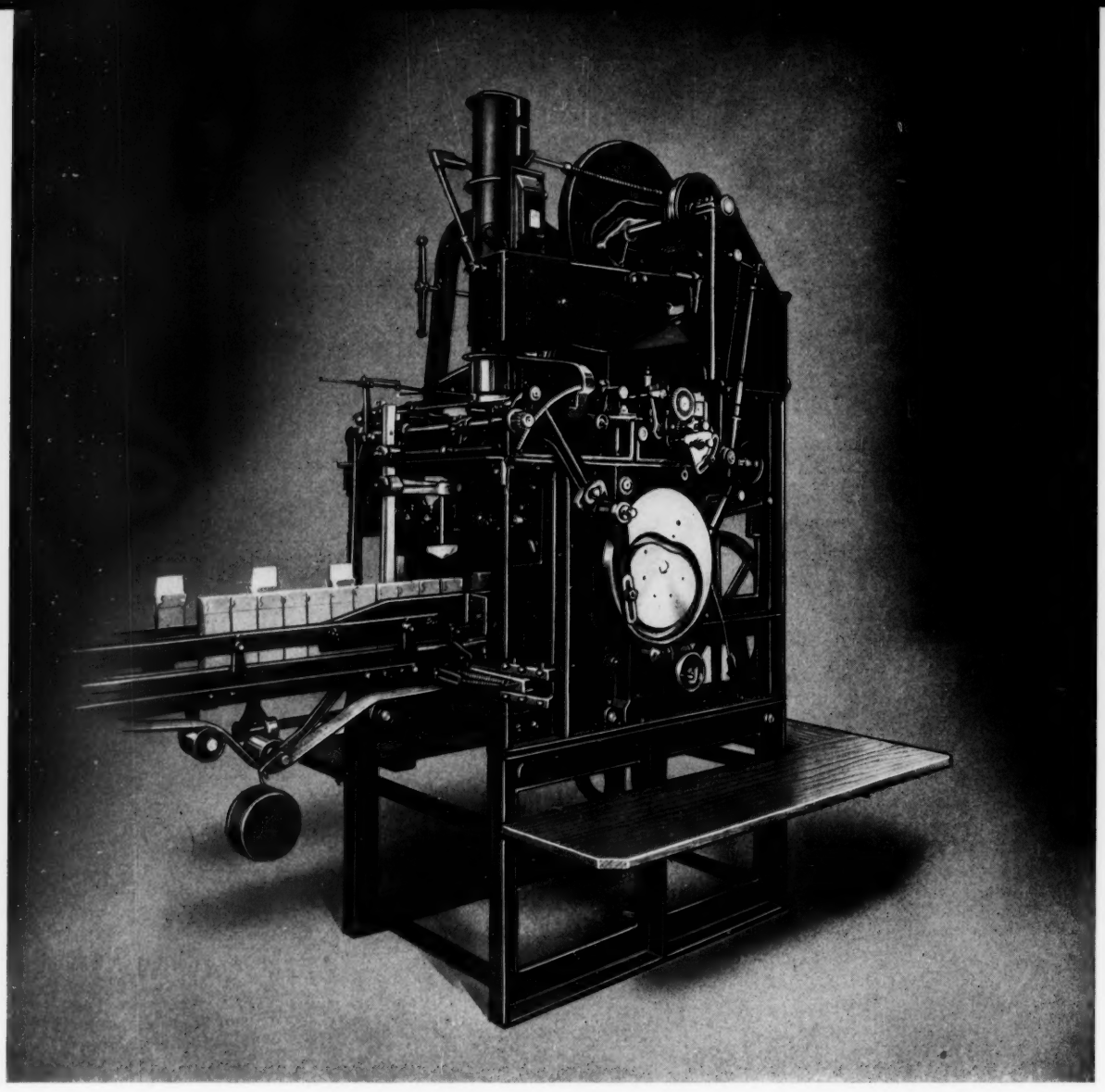
HORSEPOWER—1½ HP required for both machines. The Carton Feeder is driven and operated from Bottom Sealer. Cost of machine includes motor. Countershaft drive can be furnished when required.

ADJUSTABILITY—About 45 minutes required to change from one size package to another.

CONVEYORS—Can be equipped with either single or double conveyors. Double conveyors include device to separate the cartons or other containers into two lines; each line feeding to lining or weighing machines, operating at 30 containers per minute.

DATING DEVICE—A device for blind stamping date or identification mark on packages can be furnished as extra equipment and attached to this machine.

Note: Other types of Carton Feeders and Bottom Sealers include standard machines operating at speeds of 30 per minute.



PNEUMATIC AUTOMATIC LINING MACHINE

Class No. 4142

Materials affected by changes in atmospheric conditions require additional protection. This is provided by the use of the Pneumatic Automatic Lining Machine which cuts a proper size piece of paper from a roll, forms it to the shape of the container and inserts it, the paper lined container then passing along to the filling machine.

SPECIFICATIONS

RANGE—Will handle cartons of the following sizes:—
Minimum—1½" thick, 3" wide, 5½" high (between score lines).
Maximum—5" thick, 8" wide, 13-15/16" high (from bottom score line to upper edge of top flap).

EQUIPMENT—Price includes equipment for one size package only. Equipment for additional sizes extra. Machines will handle either parchment, glassine, foil, wax and other papers.
Standard machines are supplied for either glue seal for parchment or glassine paper; hot seal for wax papers or hot paraffine seal for foil.
Machines can be equipped for both glue and hot seal on special order.

SPEED—28 to 30 packages per minute.

FLOOR SPACE—6'1" x 7' x 8'9" high. (Conveyors not included.)

OPERATOR—One operator required when machine is used alone. No operator required when used in connection with other machines.

WEIGHT—Domestic Shipping—4,500 lbs.

HORSE-POWER—¾ HP required. Price of machine includes motor.

ADJUSTABILITY—Machines flexible and adjustable to several sizes within reasonable range. Requires about 45 minutes to change from one size package to another.

NOTE: Lining machines are in two models, each handling a separate range of carton sizes. Cartons 2½" high to 13-15/16" high (from bottom score line to upper edge of top flap) can be handled on one or the other model.

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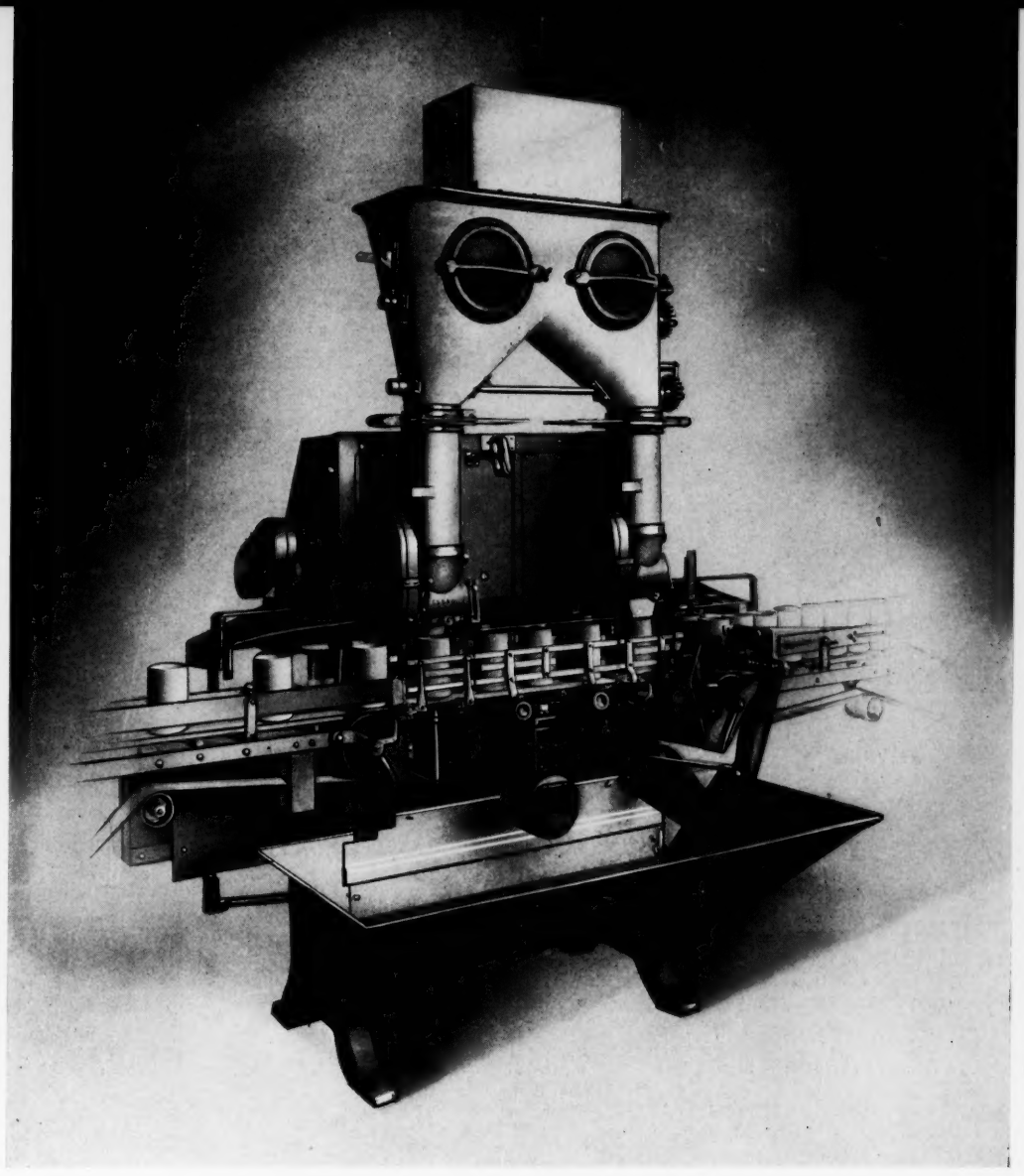


PNEUMATIC AUTOMATIC GROSS WEIGHT WEIGHING MACHINE TWO SCALE STRAIGHT LINE TYPE

Pneumatic Weighing Machines have always been accepted as the standard to which all others aspire.

The Two Scale Weighing and Filling Machine illustrated is the staunch, refined product of years of experience in solving difficult weighing problems.

A perfect, accurate machine handling not only all free flowing material but many semi-free flowing or rigid materials which tend to bridge or clog machine hoppers.

SPECIFICATIONS

RANGE—Will handle cartons of the following sizes:—Minimum—1" thick, 2" wide, 4½" high (between bottom score line and upper edge of top flap). Maximum—4" thick, 7¾" wide, 13-15/16" high (between bottom score line and upper edge of top flap).

EQUIPMENT—Equipped for one size package only. Equipment for additional sizes extra.

SPEED—25 to 30 packages per minute, depending on size of package and nature of goods.

ACCURACY—1/16 oz. plus or minus weight specified.

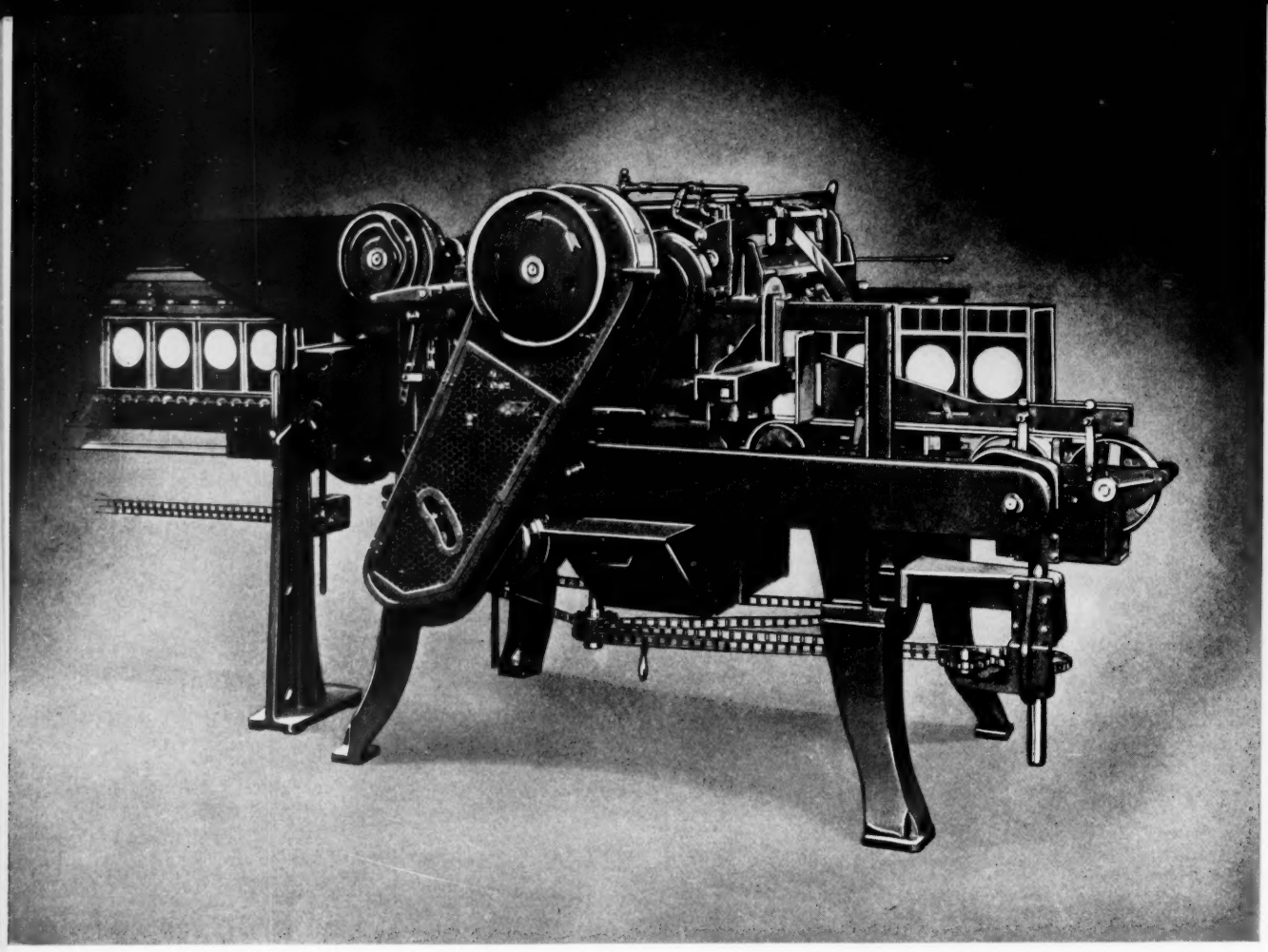
FLOOR SPACE—5'6" x 3'6" x 8' high approximately. Height varies according to available head room. (Conveyors not included.)

OPERATOR—One operator required when machine is used alone. No operator required when used in connection with other machines.

WEIGHT—Domestic Shipping—2500 lbs.

HORSE-POWER—½ HP required. Price of machine includes motor.

ADJUSTABILITY—About 15 minutes required to change from one size package to another. When changing from one material to another, Hoppers and Machine must be thoroughly cleaned, requiring about one hour's time.



PNEUMATIC AUTOMATIC HI-SPEED TOP SEALING MACHINE

Class No. 3122

The usual difficulties in sealing the top flaps of cartons have been overcome with this newly refined Top Sealing Machine. High speed operation is attained with a precision and smoothness which "float" the filled cartons through the machine without danger of spilling the contents.

A new glue feed control prevents glue splashing on machine or belts and glue supply requires replenishing but once a day.

Ingenious devices accumulate into one line the output of two slower operating weighing machines. A turning device to turn the sealed cartons broadside on the dryer belt doubles the drying time insuring a tighter seal.

SPECIFICATIONS

RANGE—Will handle cartons of the following sizes:
Minimum—¾" thick, 1¼" wide, 2½" high (between score lines).
Maximum—4⅜" thick, 7¾" wide, 9⅜" high (between score lines).

EQUIPMENT—Equipped for one size package only. Equipment for additional sizes extra. Accumulating device furnished when necessary at no additional charge. Turn-around device for placing cartons crosswise in Dryer will be charged for as additional equipment.

SPEED—60 packages per minute.

FLOOR SPACE—6'6" x 4'6" x 5'7" high approximately. (Dryer not included.)

OPERATOR—One operator required when machine is used alone. No operator required when used in connection with other machines.

WEIGHT—
Domestic Shipping—2700 lbs. with 10' Dryer.
Domestic Shipping—3200 lbs. with 16' conveyor dryer.

HORSE-POWER—¾ HP required. Price of machine includes motor.

ADJUSTABILITY—From 15 to 30 minutes required to change from one size package to another.

A device for counting number of packages sealed can be furnished as extra equipment and attached to this machine.

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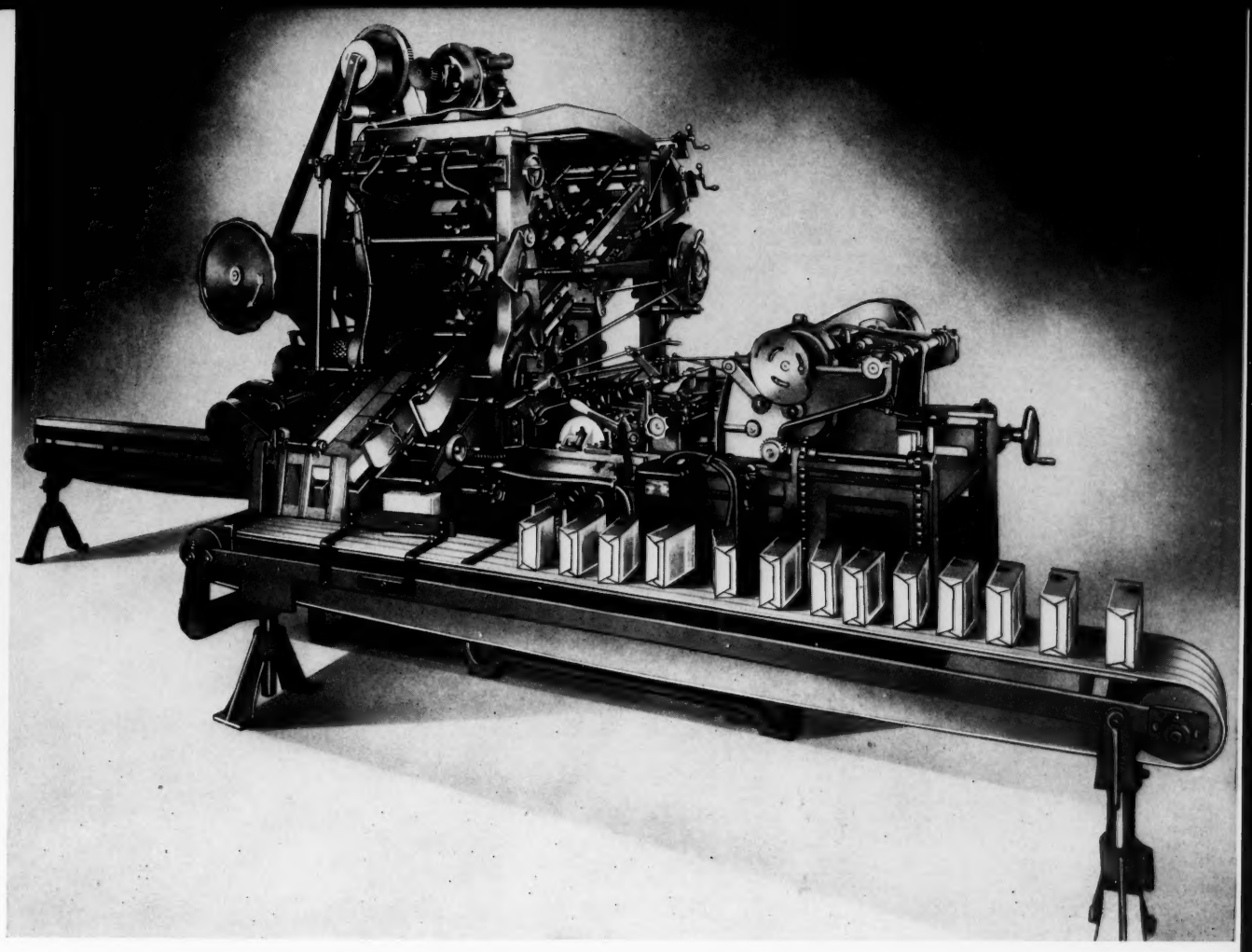


PNEUMATIC AUTOMATIC HI-SPEED TIGHT WRAPPING MACHINE

Class No. 5213

Tight Wrapping provides the ultimate in protection to packaged products, particularly when the wrappers are applied by the Pneumatic method.

By using a straight-cut, rectangular wrapper, a positive triple seal is obtained at each corner of the package. Unless these corners are properly protected, material such as flour and cereal are subject to weevil infestation.

Straight cut wrappers are less expensive, easier to handle, and produce the strongest type of package.

SPECIFICATIONS

RANGE—Will handle shells within the following sizes:—
Minimum 1½" x 2⅝" x 4¼" (between score lines).
Maximum—(standard machine) 3¾" x 6½" x 10⅛" (between score lines).
Maximum—(special machine) Refer to home office for information.

EQUIPMENT—Price includes equipment for one size package only. Equipment for additional sizes extra.

WRAPPERS—Layout of Wrapper, showing correct location of panels, etc., furnished on request.

SPEED—60 wrapped packages per minute.

FLOOR SPACE—10' x 6'6" x 8'3" high (conveyors not included).

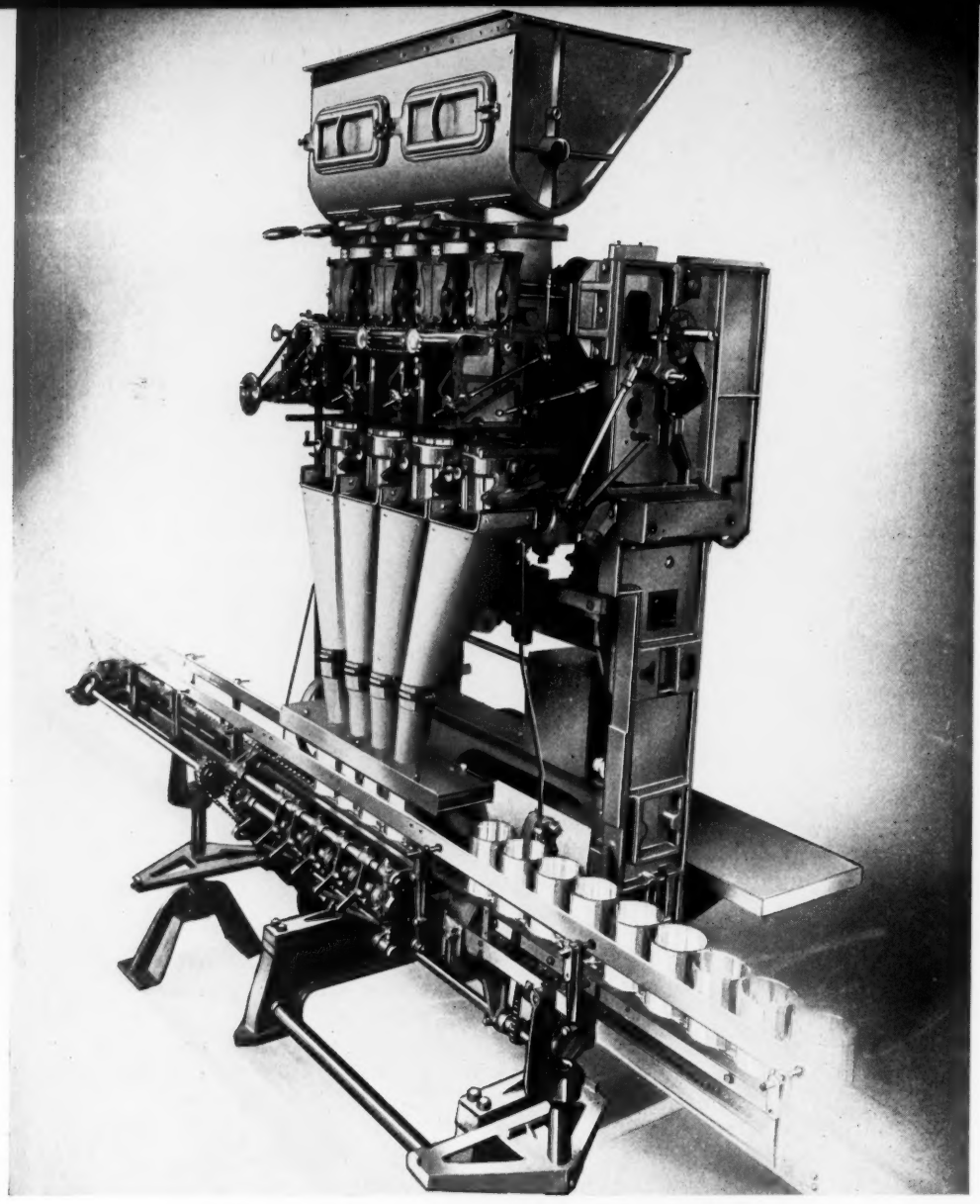
OPERATOR—One operator required.

WEIGHT—Domestic shipping 8900 lbs.

HORSE-POWER—1½ HP required. Price includes individual motor. Countershaft drive furnished, if desired.

ADJUSTABILITY—The Tight Wrapper is not readily adjustable. The most difficult adjustments are when all three dimensions of a package vary. When this occurs about four hours will be required to change from one size to another.
Frequent changes and adjustment are not recommended.

Note: The Pneumatic Tight Wrapper can be furnished in a smaller type to wrap packages of the following dimensions:
Minimum—1⅛" x 1¾" x 2¾".
Maximum—2" x 3¾" x 7".



HI-SPEED NET WEIGHT WEIGHER

Class No. 2600 to 2607

Weights and Measures Bureau officials are rigidly enforcing the laws governing correct weights of goods in packages.

Full weight packages are necessary. Over weights mean serious losses. This new type multiple Net Weight Weigher assures accurate weights at a high speed. It is the standard machine with packers who demand quantity production with a smooth, even, dependable operation.

SPECIFICATIONS

RANGE—Will handle round and rectangular containers of the following sizes:

Round
Minimum—1½" Dia. x 2½" high. Maximum—6¾" Dia. x 13-15/16" high.

Rectangular
Minimum—1" x 2" x 2½" high. Maximum—4" x 7" x 13-15/16" high (from bottom score line to upper edge of top flap).

Maximum Capacity of either round or rectangular containers must not exceed 200 cubic inches.

EQUIPMENT—Equipped for one size. Equipment for additional sizes extra.

SPEED—60 per minute.

ACCURACY—1/10 oz. plus or minus weight specified.

FLOOR SPACE—4'3" x 5' x 9'2" Approx. (Conveyors not included).

OPERATOR—One operator required when machine is used alone. No operator required when used in connection with other machines.

WEIGHT—Domestic Shipping –2500 to 4500 lbs. depending upon type of machine.

HORSEPOWER—½ HP motor. Price of machine includes motor

ADJUSTABILITY—About 30 minutes required to change from one size to another.

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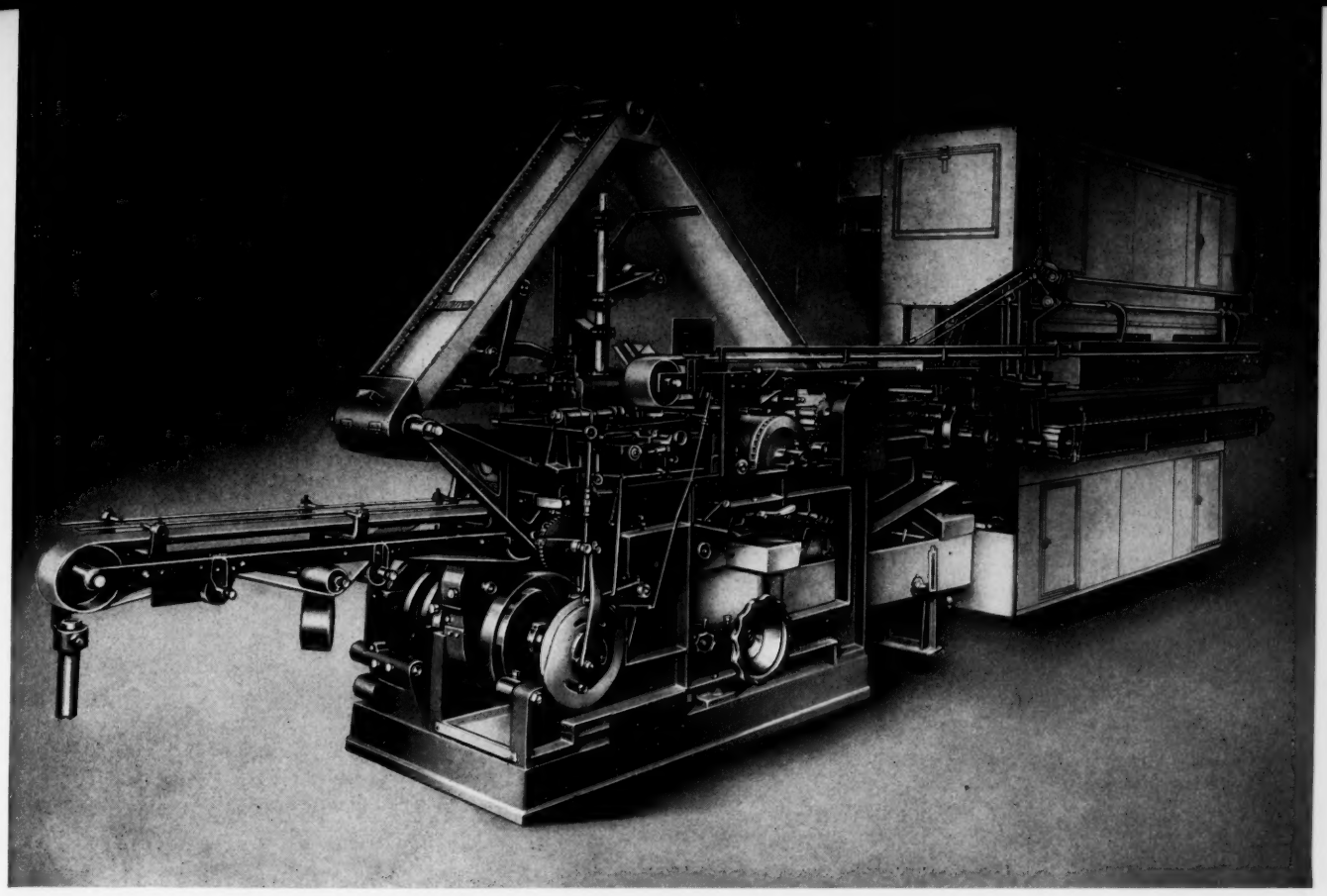


PNEUMATIC SHRINK-TIGHT-LABELING MACHINE WITH DRYER

Labeler Class No. 5511—Dryer Class No. 9111

The one labeling machine which will process the labels allowing the paper to stretch or expand before applying to containers. Labels are glued all over and registered to containers which pass automatically to the dryer.

The Dryer is filled with a series of shelves which travel slowly, permitting about 30 minutes drying time for each customer.

By this process, the moisture in the label is slowly withdrawn, the label shrinks to its original size and binds tightly to and around any irregularities in the container.

The only labeling machine that will tightly shrink labels around containers with high beads, or containers with covers larger than the bodies.

Each machine can be operated as a separate unit, if desired.

SPECIFICATIONS

RANGE—Either machine will handle round and rectangular cans and containers of the following sizes:—

	Round	Rectangular
Minimum	1½" diameter, 2½" high	1" x 1½" x 2½" high
Maximum	4¼" diameter, 7¼" high	4" x 4½" x 7¼" high

EQUIPMENT—Price of machine includes equipment for one size can or container. Equipment for additional sizes extra.

SPEED—25 to 30 cans per minute, depending on size of cans.

FLOOR SPACE—Can Labeler 7'6" x 3'8" x 7'6" high (Conveyors not included).

Can Dryer 14'8" x 8' x 10' high.

OPERATOR—One operator required to feed cans into labeling machine.

WEIGHT—

Domestic Shipping—Labeler 6,500 lbs.

Domestic Shipping—Dryer 9,100 lbs.

HORSE-POWER—1¾ HP required for both machines, when Dryer is attached to and driven from the Labeling Machine.

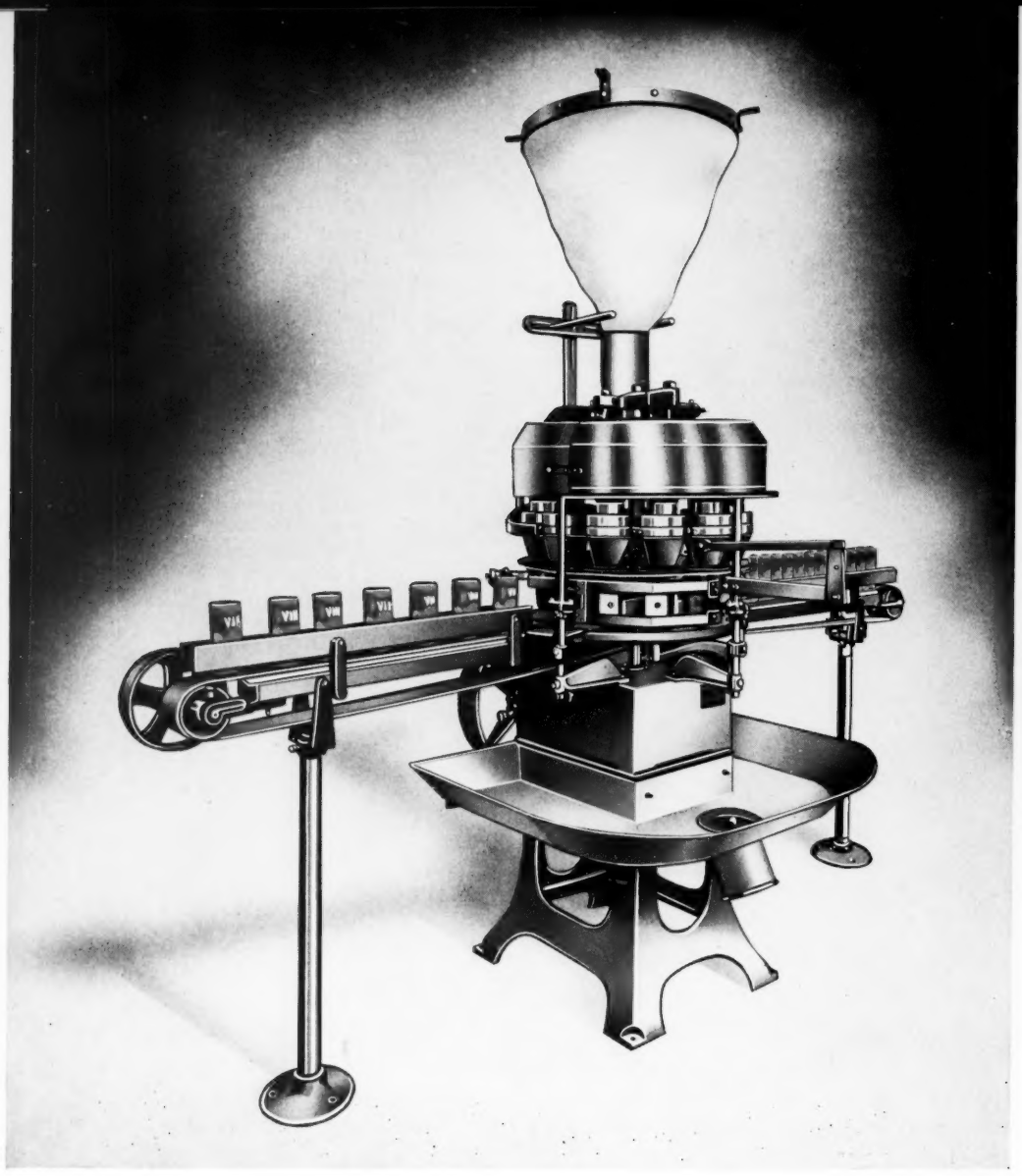
¾ HP required for Dryer when operated separately.

⅞ HP motor required to drive Air Fan on Dryer.

Price of machine includes motors.

ADJUSTABILITY—About 45 minutes required to change from one size container to another.

HEAT—Dryer is equipped for Steam Heat only. Can be arranged for gas heat if required for special cases.



PNEUMATIC CAN FILLER

Class No. 7111

Designed principally for scouring powders and other material of an abrasive nature. Can Filler is strictly a measuring machine and does not weigh goods.

SPECIFICATIONS

RANGE—Will handle containers of the following sizes:
Minimum—2" diameter x 3" high.
Maximum—3" diameter x 7¼" high.
Cubic capacity of containers must not exceed 50 cubic inches.

EQUIPMENT—Equipped for one size can or container only. Equipment for additional sizes extra.

SPEED—40 to 60 per minute, depending on character of material.

ACCURACY—Guaranteed within ½ oz. plus or minus weight specified.

FLOOR SPACE—3'6" x 8'6" x 7'10" high (Conveyors included).

OPERATOR—One operator required.

WEIGHT—Domestic Shipping—1700 lbs.

HORSEPOWER—½ HP required. Price of machine includes motor.

ADJUSTABILITY—Requires about 30 minutes to change from one size container to another.

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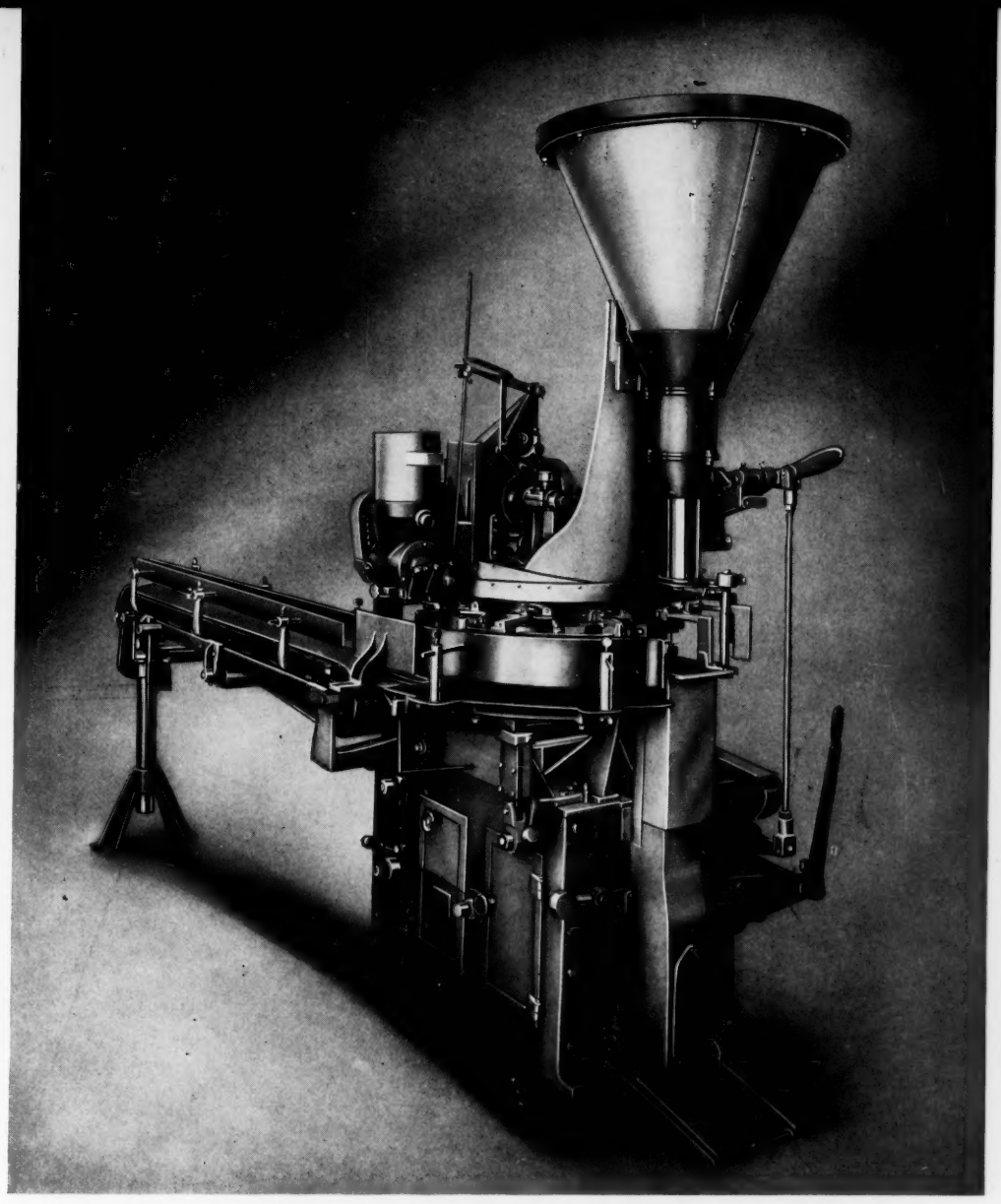


PNEUMATIC BAG FLOUR WEIGHER

Class No. 2543

Pneumatic Bag Flour Weighers are made in three sizes. Each machine will handle several sizes of bags within certain ranges.

While primarily designed for the rapid and accurate weighing of flour into cloth and paper bags, some other materials such as insecticides, calcimine, etc., can be handled to advantage.

SPECIFICATIONS

RANGE—From 2 to 7 lbs.

EQUIPMENT—Equipped to handle 2—3½ and 7 lb. bags. Equipment for additional sizes extra.

BAGS—Cloth or paper.

SPEED—14 to 20 bags per minute.

ACCURACY—Within ⅛ oz. plus or minus weight specified.

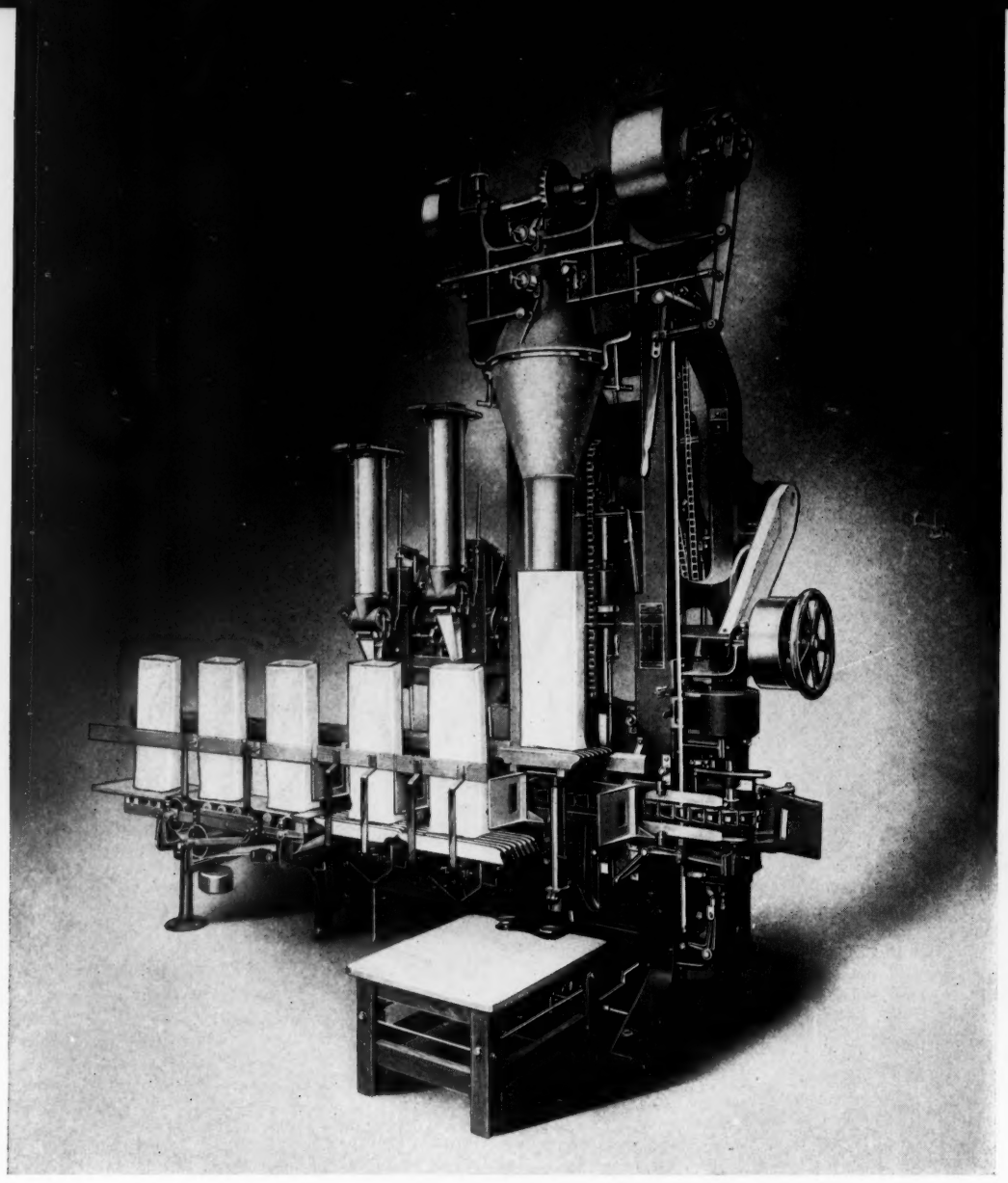
FLOOR SPACE—3'9" x 8'3" x 9'2" high.

OPERATOR—One operator required.

WEIGHT—Domestic Shipping—3100 lbs.

HORSEPOWER—7 HP required. Countershaft Drive only.

ADJUSTABILITY—Requires about 15 minutes to change from one size bag to another.



PNEUMATIC BAG FLOUR WEIGHER

Class No. 2521

Pneumatic Bag Flour Weighing Machines are designed and operated in a manner to assure accurate weights. On our large machines three filling hoppers are used. About seven-eighths of the desired quantity of material measured and placed in the bag at the first hopper. At the second and third hoppers a fine stream of material is dribbled into the bag; this stream is automatically shut off when exact weight of material is deposited.

SPECIFICATIONS

RANGE—12 to 49 lbs.

EQUIPMENT—Equipped to handle 12-24 and 49 lb. bags. Equipment for additional sizes extra.

BAGS—Cloth or paper.

SPEED—
12 bags per minute on 12 lb. size.
10 to 12 bags per minute on 24 lb. size.
6 to 8 bags per minute on 49 lb. size.

ACCURACY—
Within 1/4 oz. plus or minus weight specified on 12 lb. size.
Within 1/2 oz. plus or minus weight specified on 24 lb. size.
Within 1 oz. plus or minus weight specified on 49 lb. size.

FLOOR SPACE—5'10" x 11'5" x 10'4 1/2" high.

OPERATOR—One operator required.

WEIGHT—Domestic Shipping 7100 lbs.

HORSEPOWER—15 H.P. required. Countershaft Drive only.

ADJUSTABILITY—Requires about 15 minutes to change from one size bag to another.

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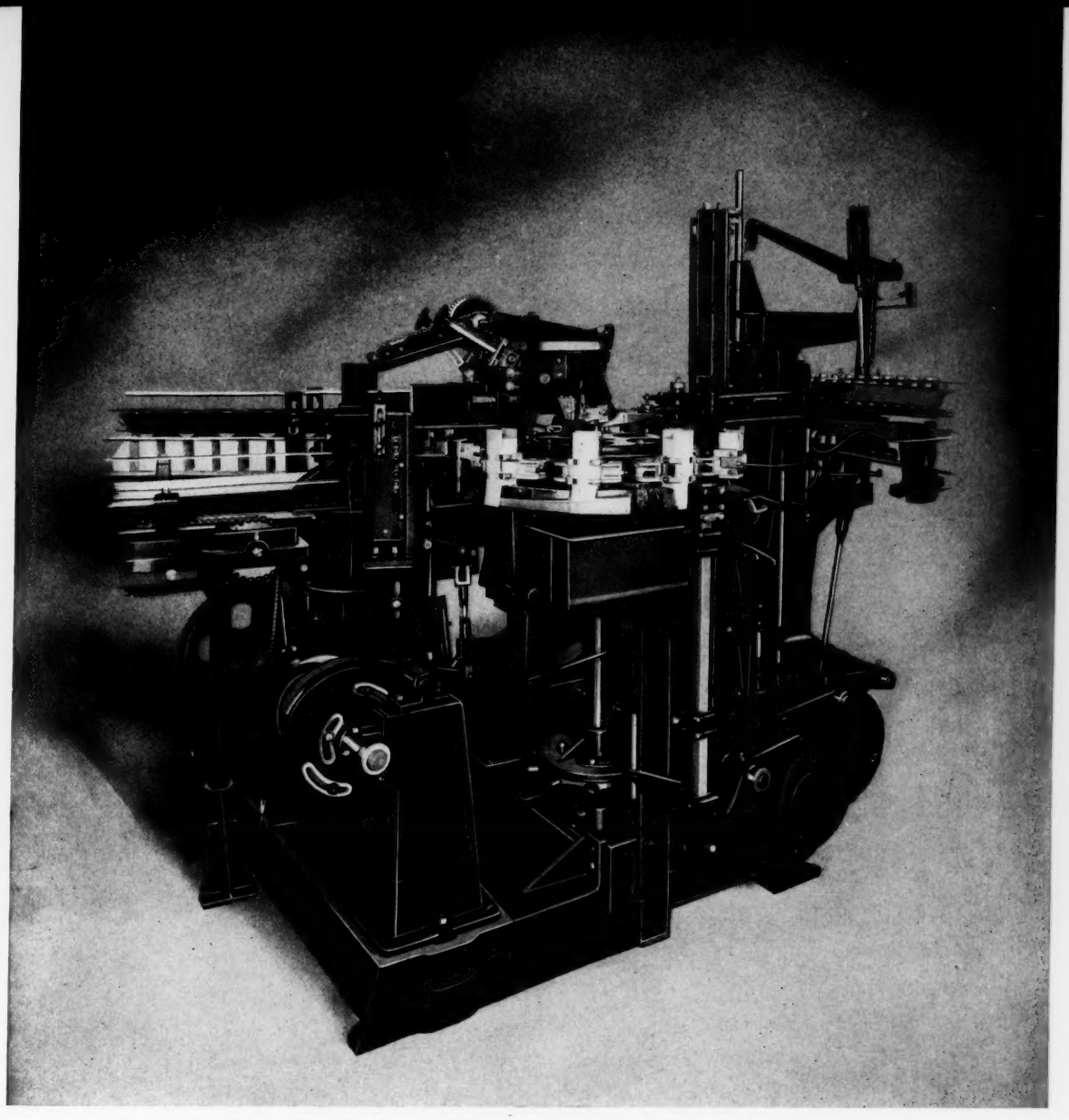


COMBINATION CARTON FILLING AND SEALING MACHINE

Class No. 3711

All the operations of feeding, sealing and filling the cartons are combined in this one machine. An ideal machine for use where floor space is limited.

Material is measured and a remarkable degree of accuracy maintained especially where material packed is of uniform volume.

SPECIFICATIONS

RANGE—Will handle cartons of the following sizes: Minimum—⅞" x 1¾" x 2¼". Maximum—2¼" x 4" x 7".

EQUIPMENT—Equipped for one size package only.

SPEED—60 packages per minute.

ACCURACY—Measuring Device used for Filling. Accuracy dependent upon the uniform consistency of the material.

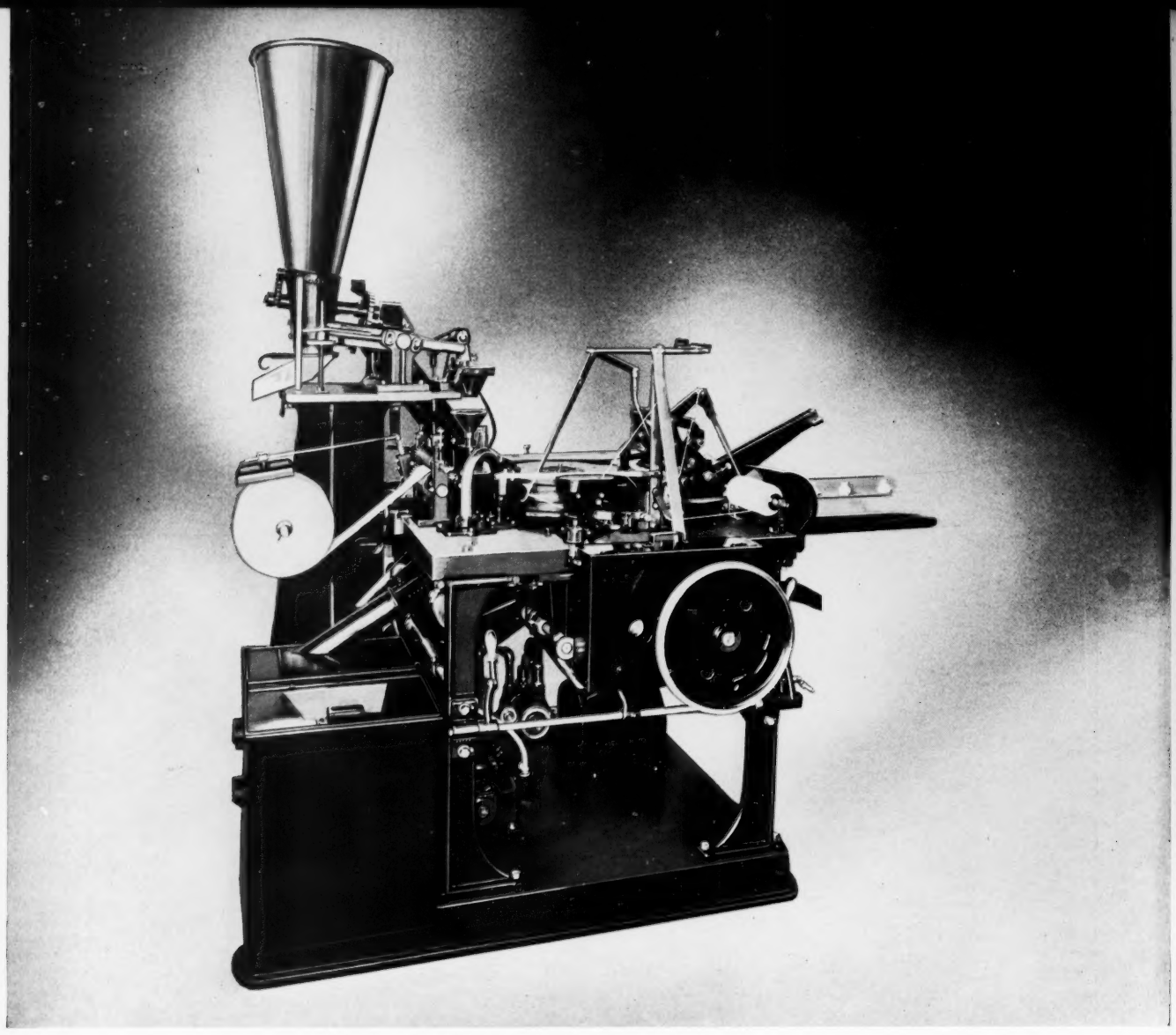
FLOOR SPACE—8'3" x 11'7" x 7'10" high (Carton Feeder & Dryer included)

OPERATOR—One operator required for packing.

WEIGHT—Domestic Shipping—4000 lbs.

HORSEPOWER—½ or ¾ HP motor depending on the nature of the goods. Price of machine includes motor.

ADJUSTABILITY—Machine not readily adjustable. Recommended for one size only.



PNEUMATIC AUTOMATIC TEA BALL MACHINE

Class No. 9121

The many advantages of the Pneumatic type of tea ball have been recognized by America's best known tea merchants in their choice of the Pneumatic Automatic Tea Ball Machine. Thomas J. Lipton, Inc., Joseph Tetley & Co., Inc., Chase & Sanborn, Wm. S. Scull Co., and many others use batteries of Pneumatic machines to produce their internationally known brands of quality tea balls.

All the various operations — cutting the pure web-like gauze from a self-feeding roll, accurately weighing the tea into the gauze, forming and tying the bag and attaching the tag — are fully automatic and effected with a pleasing surety and smoothness. Most grades of tea, coarse or fine, are accurately and efficiently handled.

SPECIFICATIONS

RANGE—
Minimum—Gauze 4½" square to pack 200 tea balls per lb. of tea.
Maximum—Gauze 7" square to pack 75 tea balls per lb. of tea.
Minimum—Tags ¾" x 1"
Maximum—Tags 1⅛" x 1¼"

EQUIPMENT—Machine adjustable within the above limits without additional equipment. Tag of different shape may require new chute.

SPEED—30 to 35 per minute.

ACCURACY—1/100 oz. plus or minus specified weight.

FLOOR SPACE—7'6" x 12'6" x 6'6" high (including machine hopper).

OPERATOR—One operator required to remove finished tea balls and pack in containers.

WEIGHT—Domestic Shipping—3400 lbs.

HORSE-POWER—1 HP motor required. Price of machine includes motor.

ADJUSTMENT—Requires about 15 minutes to change from one size bag to another. About 30 minutes required if different tag is used.

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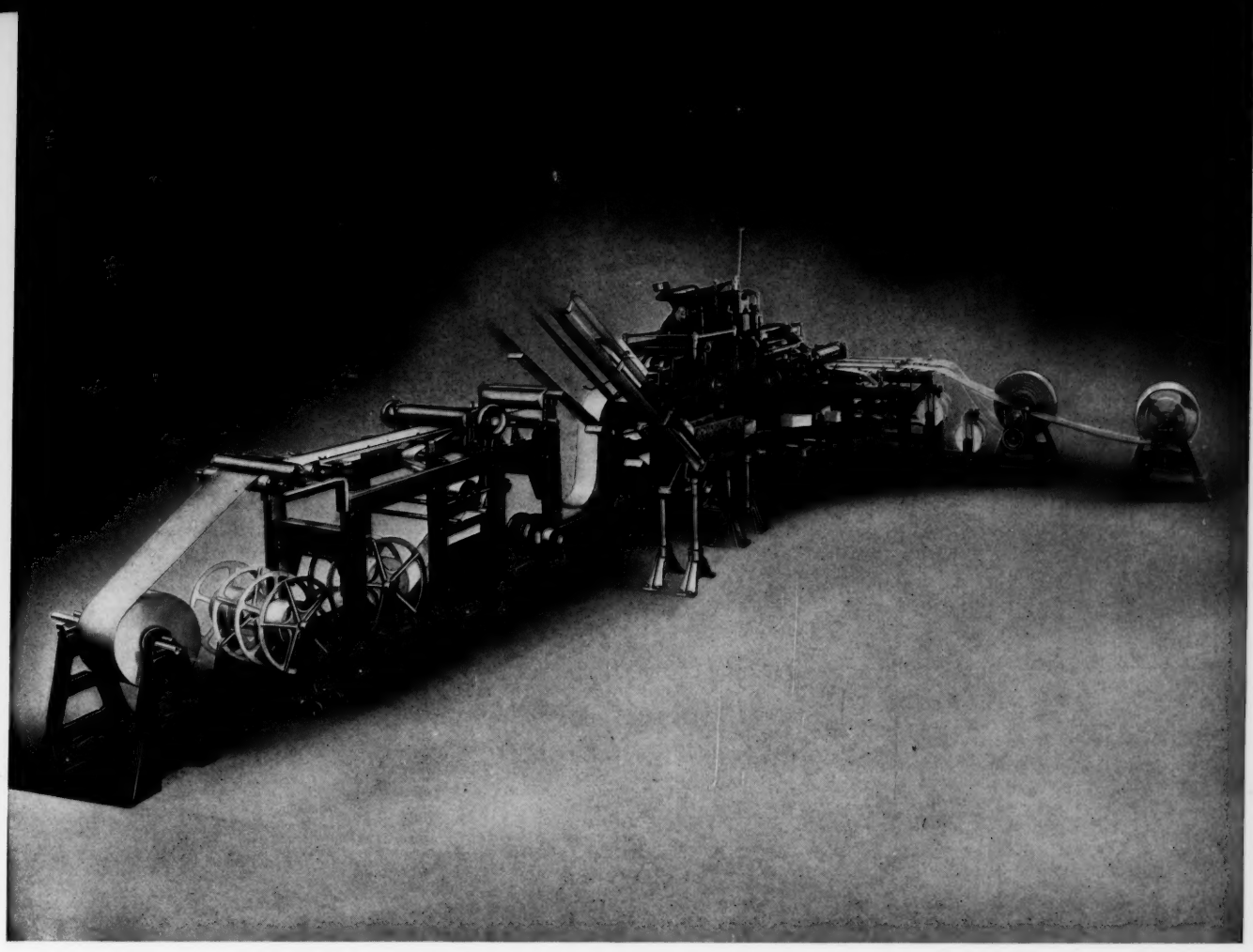

CLAFF AUTOMATIC DOUBLE END PROCESS BOX MAKING MACHINE

Class No. 9161

A complete box plant combined in one machine. All the usual semi-automatic intermediate operations eliminated. Takes board and paper in rolls and turns out finished boxes or tops. No rehandling and no defective pieces. All the operations of covering, creasing, blanking, etc., to turning out the finished box is a continuous automatic operation producing an unusually strong box with a definite saving in material, time and labor.

SPECIFICATIONS

RANGE—Will handle boxes of the following sizes:—
Minimum—¾" deep, 3" wide, 8" long.
Maximum—5" deep, 8" wide, 14" long.
(Length of box must be twice its depth plus 1")
Minimum and Maximum sizes cannot be handled on the same machine.

EQUIPMENT—Equipped for one size box. Equipment for additional sizes extra.

CARDBOARD—Fed from rolls (three required).

COVERING PAPER—Fed from rolls (three or four rolls required according to type of box).

SPEED—35 to 38 box bodies or lids per minute.

FLOOR SPACE—31'8" x 22'0".

OPERATOR—One operator and helper required.

WEIGHT—Domestic Shipping—18,000 lbs.

DRIVE—2 HP required. Price of machine includes motor.

ADJUSTABILITY—Requires about 60 minutes to change from one size box to another.

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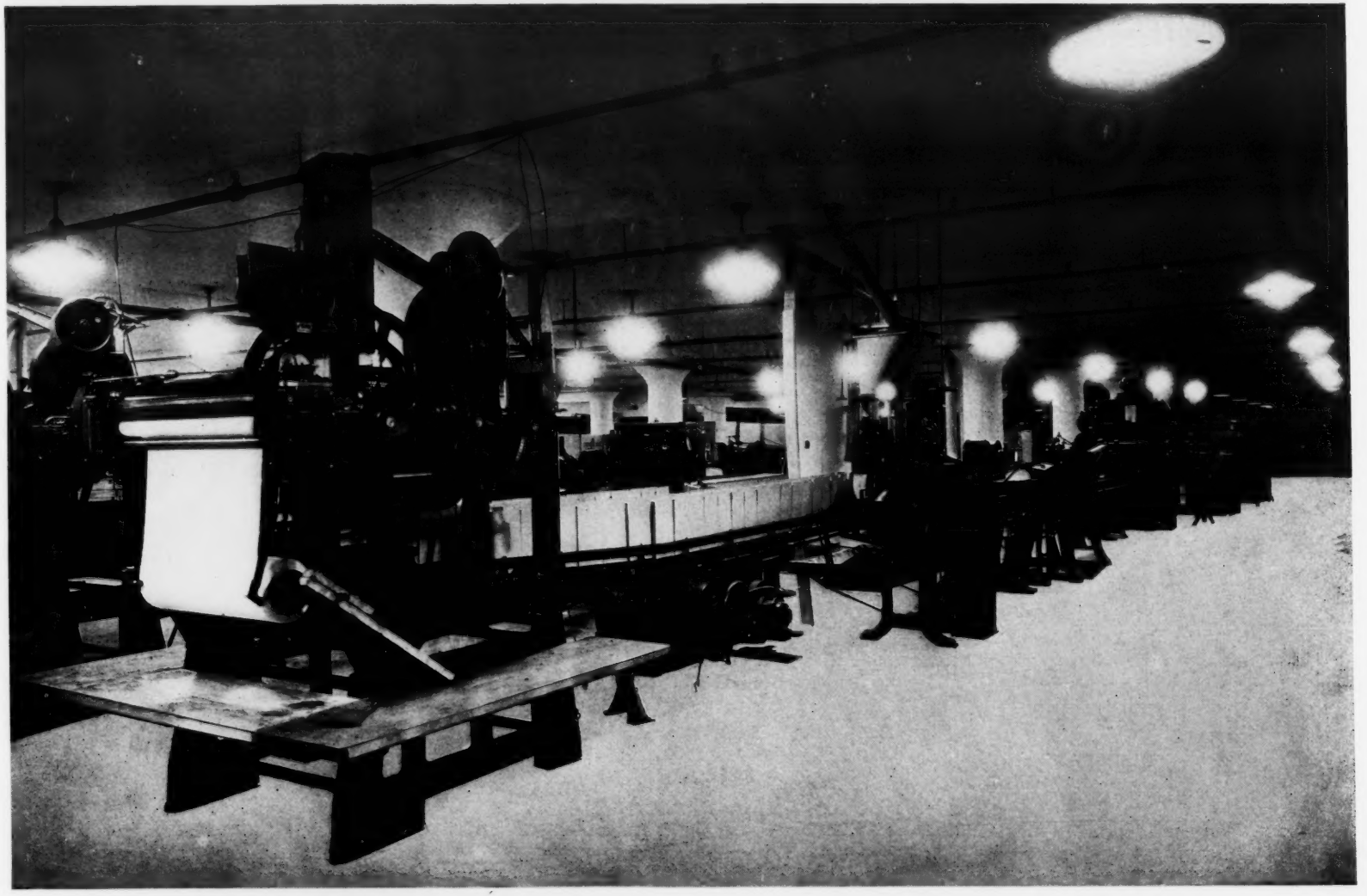
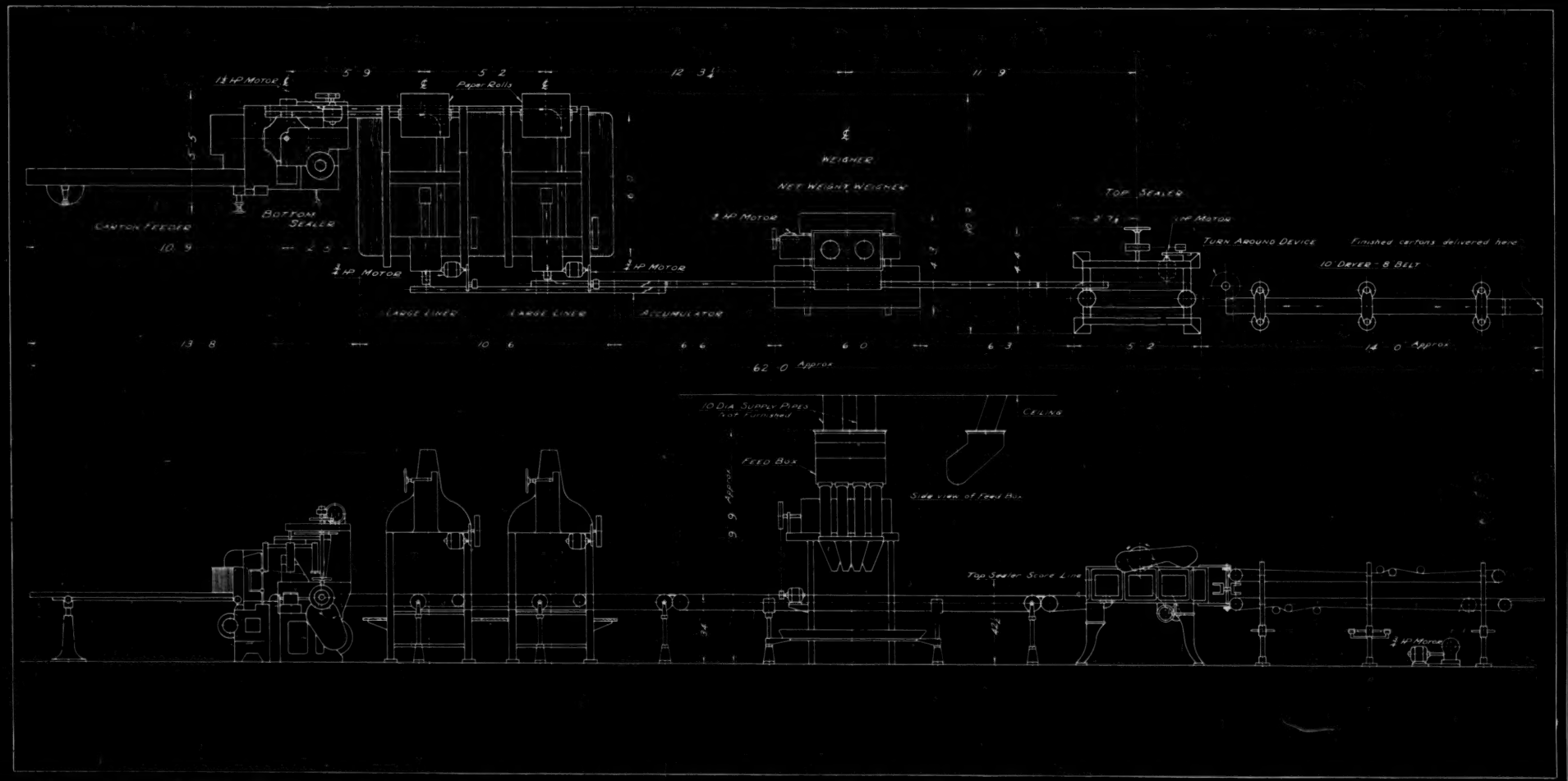


A battery of several lines of Pneumatic Scale Corporation machines, consisting of Automatic Carton Feeders, Bottom Sealers, Lining Machines, Weighing and Filling Machines, Top Sealing and Wrapping Machines, operating in the plant of the Jewel Tea Co., Barrington, Illinois.



DRAWING SHOWING TYPICAL FLOOR PLAN OF A PNEUMATIC PACKAGING UNIT

PNEUMATIC SCALE CORPORATION, LTD., Norfolk Downs, (Quincy) Mass.

Seventy Different Types of Standard Packaging Machines

Below are listed some of the 70 different types of standard packaging machines manufactured by the Pneumatic Scale Corporation for every packaging purpose, dry or liquid:

For Cartons

Carton Feeders

Bottom Sealers

Lining Machines

Coupon Devices

Filling and Weighing Machines

Top Sealers

Dating Devices

Tight Wrappers

Dryers

For Cans, Tins, Jars, etc.

Weighers and Fillers

Fillers

Cappers

Wet Labelers

Drum Labelers

Wrappers (Dry)

Dryers

For Sacks and Bags

Fillers and Weighers

For Bottles, Cans and Other Containers

Vacuum Filling Machines

Bottle and Can Capping Machines

Corking Devices

Volumetric Powder Fillers

For Other Purposes

Claff Automatic Box Making Machine

Automatic Tea Ball Machines

Automatic Butter Cutting and Wrapping Machine

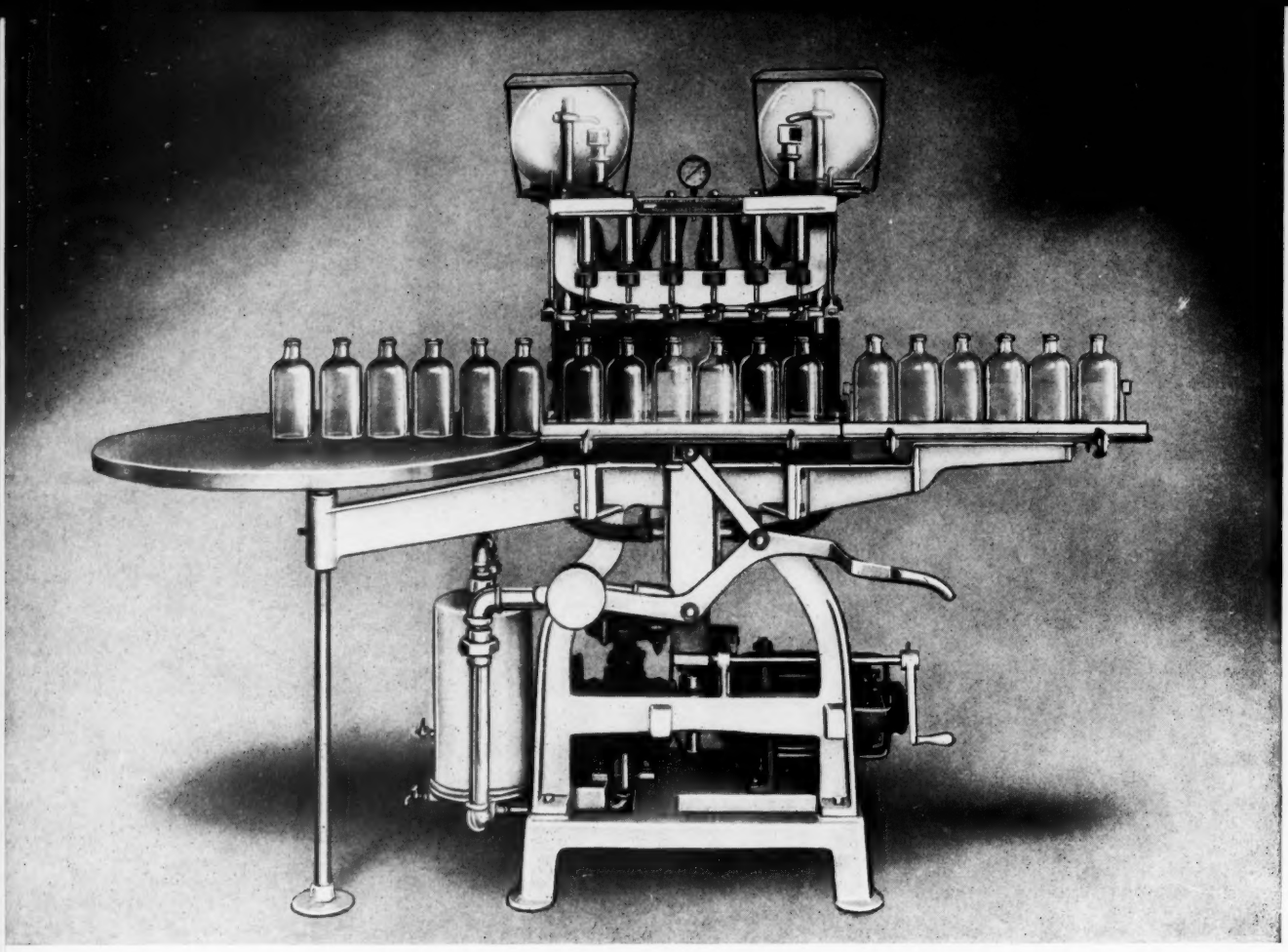
Automatic Coin Handling Machines

XUM

AUTOMATIC MACHINERY FOR LIQUID FILLING

VACUUM FILLING
CAPPING
CORKING

PNEUMATIC SCALE CORPORATION, LTD.
NORFOLK DOWNS · (QUINCY) · MASS.



SAMCO JR. VACUUM FILLING MACHINE

Class No. 7113

A sturdy, rugged vacuum filling machine, particularly useful where a number of sizes of bottles and a wide variety of materials are handled. Changes from one size container to another are simple, requiring from 10 to 25 minutes time.

SPECIFICATIONS

RANGE—Will fill practically all types of bottles (regular or sprinkler top finish) and cans from 1 oz. to 1 gal. sizes.

EQUIPMENT—Price includes equipment for one size container. Equipment for additional sizes extra.

SPEED—Rated at 30 filled containers per minute.

ACCURACY—Will fill every container to the same predetermined level.

ADJUSTABILITY—Machine is flexible and adjustable to different sizes within reasonable range. Changes from one size to another require from 10 to 25 minutes time.

FLOOR SPACE—3' x 5' x 6' high.

WEIGHT—Domestic Shipping—1200 lbs.

MOTOR DRIVE—1 HP motor for Vacuum Pump drive furnished.

OPERATOR—Machine is semi-automatic, one operator required to feed empty containers and remove filled containers.

ROTARY TABLE—For collecting the filled containers; can be furnished as extra equipment at additional cost.

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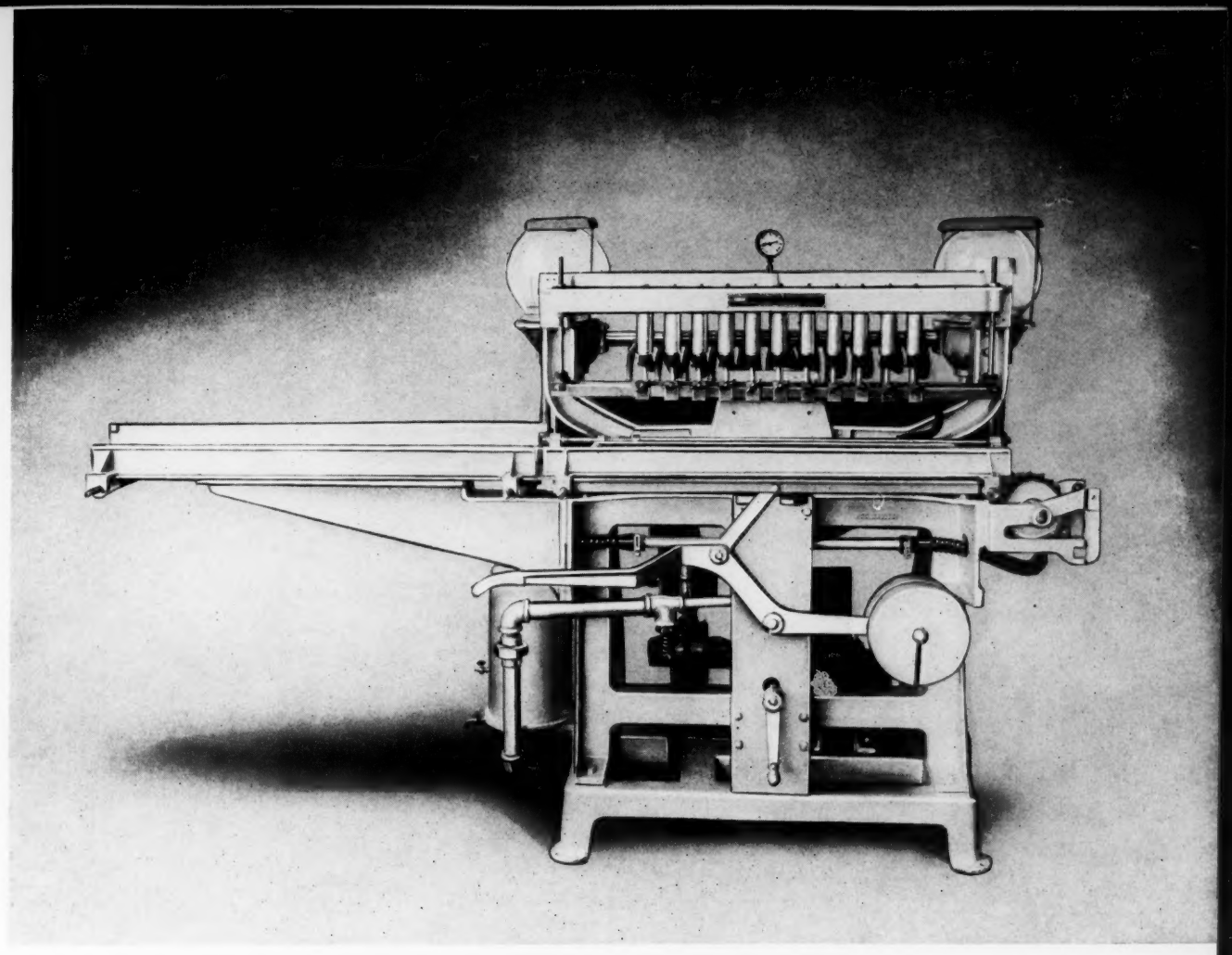


ENLARGED SAMCO VACUUM FILLING MACHINE

Class No. 7122

While this machine was specially designed to fill eleven quarts or six gallon jugs at a time and give the generally desired speed on these sizes, this same machine will fill smaller containers with equal facility, and at proportionately greater speed.

It can be used for small and medium size bottles or cans in the general run, then be shifted to runs on the larger sizes with no more trouble than comes with the ordinary machine changes from size to size.

The filling parts are made of a material to withstand the corrosive action of the products to be filled. . . . For filling vinegar, ketchup, and pharmaceutical products.

SPECIFICATIONS

RANGE—Will fill practically all types of bottles (regular or sprinkler top finish) and cans from 1 oz. to 1 gal. sizes.

EQUIPMENT—Price includes equipment for one size container. Equipment for additional sizes extra.

SPEED—Rated at 40 to 50 filled containers per minute, according to size of container and character of material to be filled.

ACCURACY—Will fill every container to the same predetermined level.

ADJUSTABILITY—Machine is flexible and adjustable to different sizes within reasonable range. Changes from one size to another require from 20 to 40 minutes.

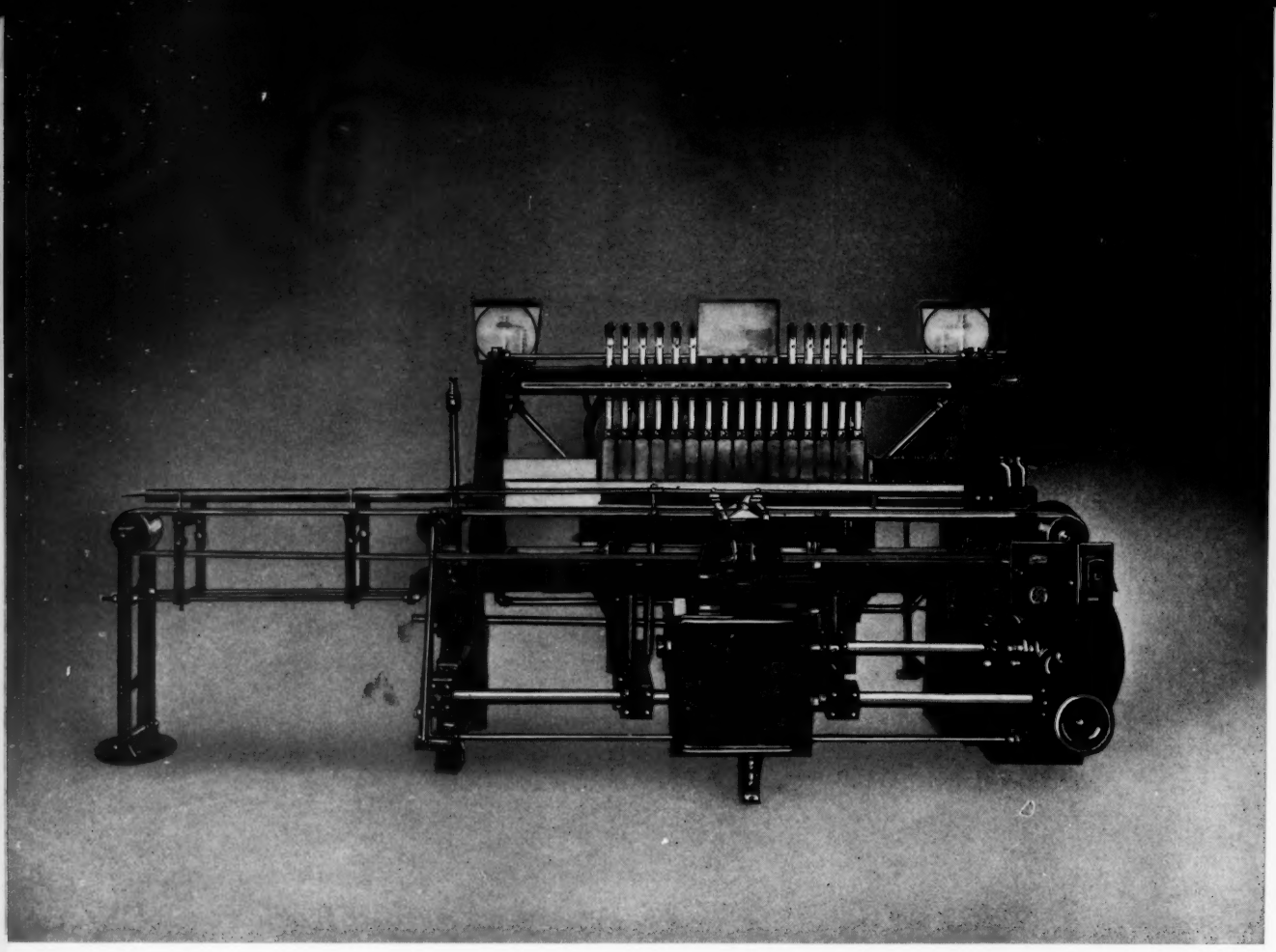
FLOOR SPACE—3' x 7' x 6' high.

WEIGHT—Domestic shipping—1900 lbs.

MOTOR DRIVE—One HP motor required to drive Vacuum Pump. This motor furnished with machine.

OPERATOR—Machine is semi-automatic, one operator required to feed empty containers and remove filled containers.

XUM



FULLY AUTOMATIC VACUUM FILLING MACHINE

Class No. 7124

Where steady, long runs and positive, dependable production schedules must be maintained, our Fully Automatic Vacuum Filling Machine is recommended.

———SPECIFICATIONS———

RANGE—Will fill practically all types of bottles (regular and sprinkler top finish) and cans from 1 oz. to 1 qt. sizes.

EQUIPMENT—Price includes equipment for one size container. Equipment for additional sizes extra.

SPEED—50 to 100 per minute, depending on—
1. Container and product to be filled.
2. Number of filling heads which vary from 12 to 20.

ACCURACY—Will fill every container to the same predetermined level.

ADJUSTABILITY—Machine is flexible and adjustable to different sizes within reasonable range. Changes from one size to another require from 30 to 45 minutes.

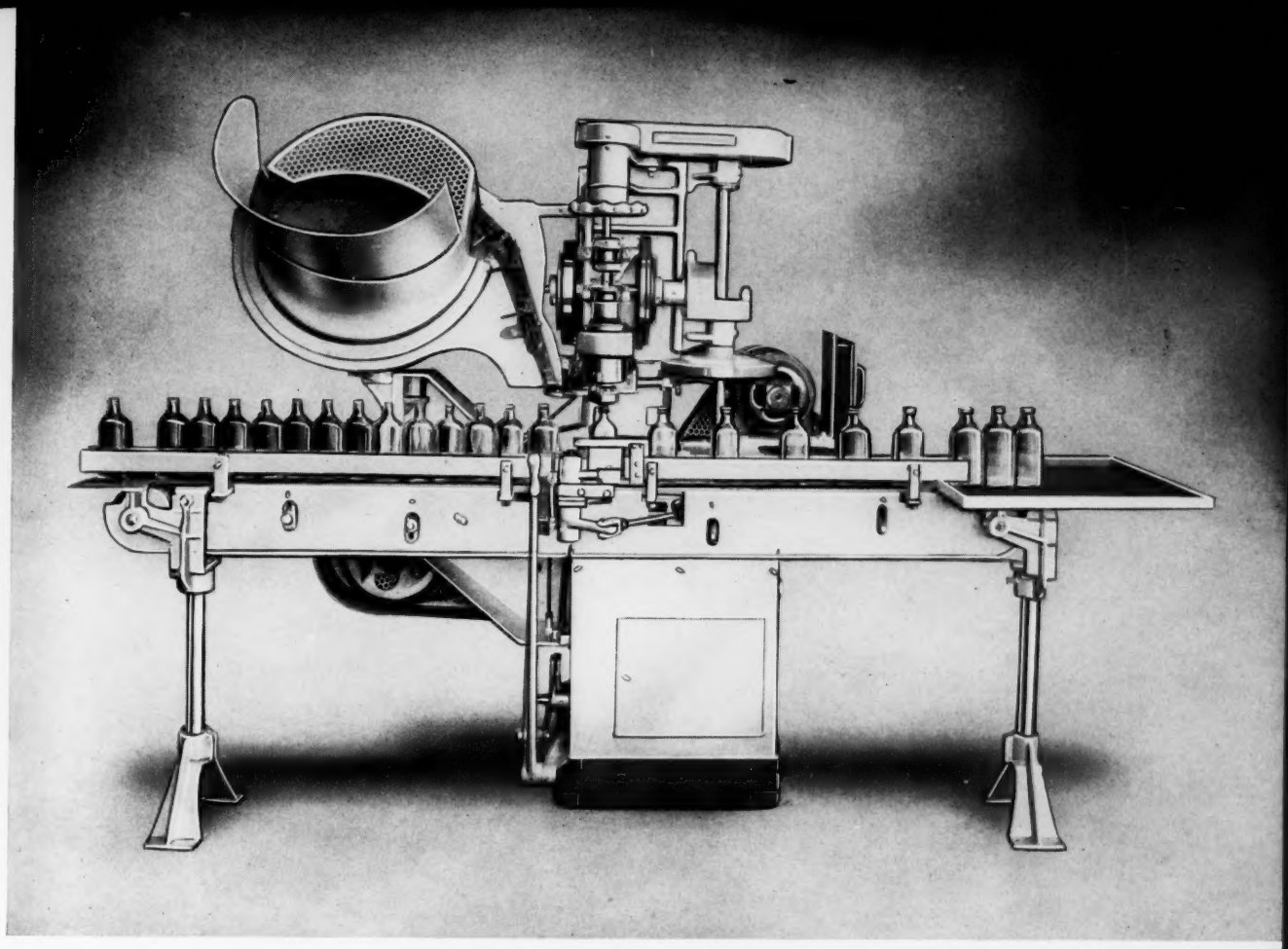
FLOOR SPACE—4' x 12' x 6' high.

WEIGHT—Domestic Shipping—4100 lbs.

MOTOR DRIVE—½ HP motor required for machine drive. 1½ HP motor required to drive Vacuum Pump. These motors are furnished with machine.

OPERATOR—Machine is fully automatic, one operator required to feed bottles.

XUM



SINGLE HEAD AUTOMATIC SCREW CAPPING MACHINE WITH AUTOMATIC CAP FEED

Class No. 3321

Our Single Head Screw Capper is of the same fine construction as our Six Head Machine and equipped with the same super-sensitive type capping head.

The Automatic Cap Feeds, shown with the Single and Six Head Cappers contain an easily accessible hopper into which the caps can be dumped in quantities. It is impossible to jam the feed hoppers. They are easily and quickly adjustable; all working parts are accessible and within easy reach from the floor.

Standard Vacuum Filling Units can be operated with either of these Capping Machines accomplishing the filling, cap feeding and cap turning in a continuous process without employing a single hand operation.

SPECIFICATIONS

RANGE—Will handle any type of turn-on closure and a variety of sizes and shapes of containers.

EQUIPMENT—Price includes equipment for one size container. Equipment for additional sizes extra.

SPEED—Rated at 40 per minute.

ADJUSTABILITY—Machine is flexible and adjustable to different sizes within reasonable range. Changes from one size to another require from 10 to 30 minutes.

FLOOR SPACE—(Including Automatic Cap Feed)—3½′ x 8½′ x 6½′ high.

CONVEYORS—3′9″ intake—3′3″ delivery.

WEIGHT—Domestic Shipping—3200 lbs.

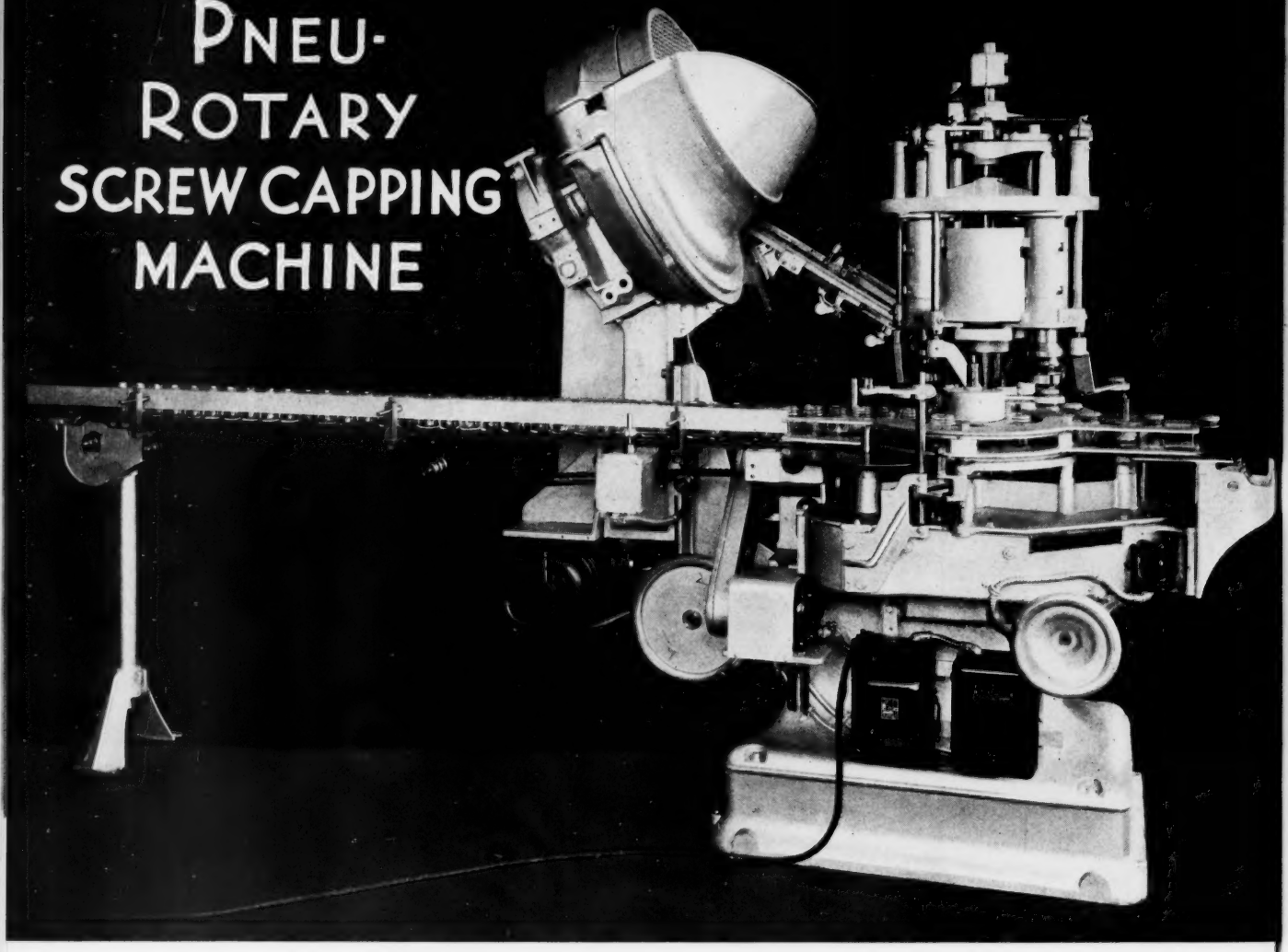
MOTOR DRIVE—¾ HP motor required. Price of machine includes motor.

OPERATOR—Capping Machine is fully automatic in operation. Attendant only required to occasionally refill the cap feed hopper.

SPECIAL EQUIPMENT—Can be furnished for applying slip-on covers to certain types of cans.

XUM

PNEU-ROTARY SCREW CAPPING MACHINE



Specifications

Range—Will handle any style of threaded or lug type of turn-on closure, and a variety of sizes and shapes of containers.

Equipment—Price includes equipment for one size container. Equipment for additional sizes extra.

Speed—50 to 120 per minute.

Adjustability—Machines are flexible and easily adjustable to different sizes of caps and containers.

Floor Space—(Cap Feed incorporated as an integral part of the machine proper) 3′ 5″ x 9′ 0″ x 7′ 6″.

Standard Conveyor—6′ 0″ intake.

Weight—Domestic Shipping—3800 lbs. Export Shipping—4200 lbs.

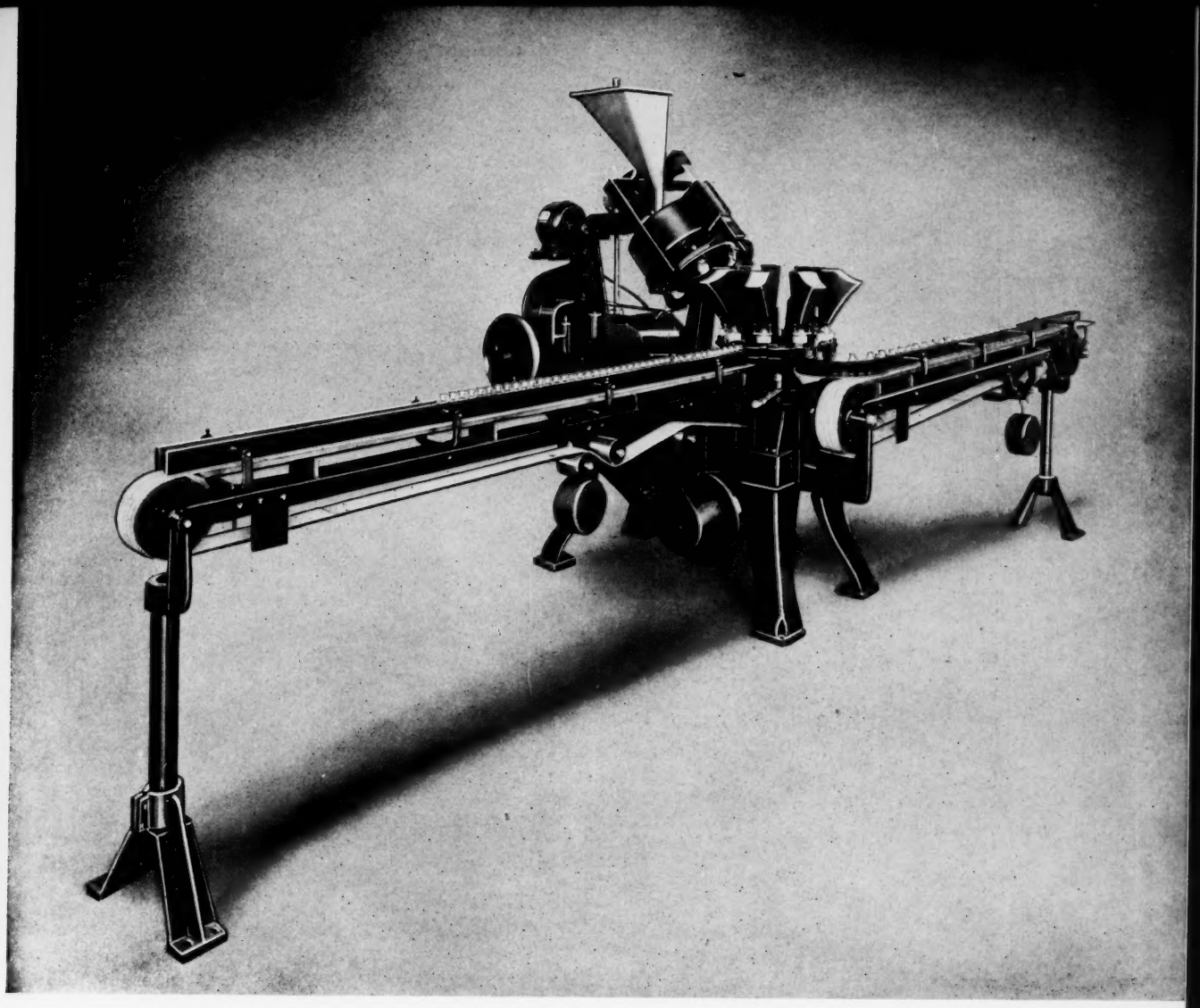
Motor Drive—1 HP 1750 RPM Motor for machine proper. ¼ HP 1200 RPM Motor for intake conveyor.

Operator—Machines are fully automatic. Attendant will occasionally refill cap feed hopper.

Special—A Reeves Variable Speed Driving Transmission can be furnished as extra equipment.

PNEUMATIC SCALE CORPORATION, LTD., Norfolk Downs, (Quincy) Mass.

XUM



VOLUMETRIC FILLING MACHINE
For Granular Material
Class No. 7121

This machine adaptable for filling an accurate volume of free flowing granular or crystalline material, such as crystallized salts, etc., into round or rectangular bottles, cans and other containers constructed with sufficiently large openings. Particularly recommended for smaller sizes ranging from 1 to 5 oz. where accurate weights are not essential but high speed production is an important factor.

SPECIFICATIONS

RANGE—Best suited for filling bottles and cans holding from one to five oz. of material.

EQUIPMENT—Price includes equipment to handle one size container. Equipment for additional sizes extra.

SPEED—40 to 100 filled containers per minute, depending on

1. Nature of material to be filled.
2. Style, shape and size of containers.

ACCURACY—Will fill an accurately measured volume of material into each container. Weights depend on uniformity of material.

ADJUSTABILITY—This is essentially a one size machine although several sizes can be handled on the same machine under certain favorable conditions.

FLOOR SPACE—13' x 5'.

WEIGHT—Domestic Shipping—1900 lbs.

OPERATOR—No operator required.

SPECIAL EQUIPMENT—When materials are affected by absorbing moisture from the air and air conditioning is necessary, we can supply heated and insulated machine casing, if required.

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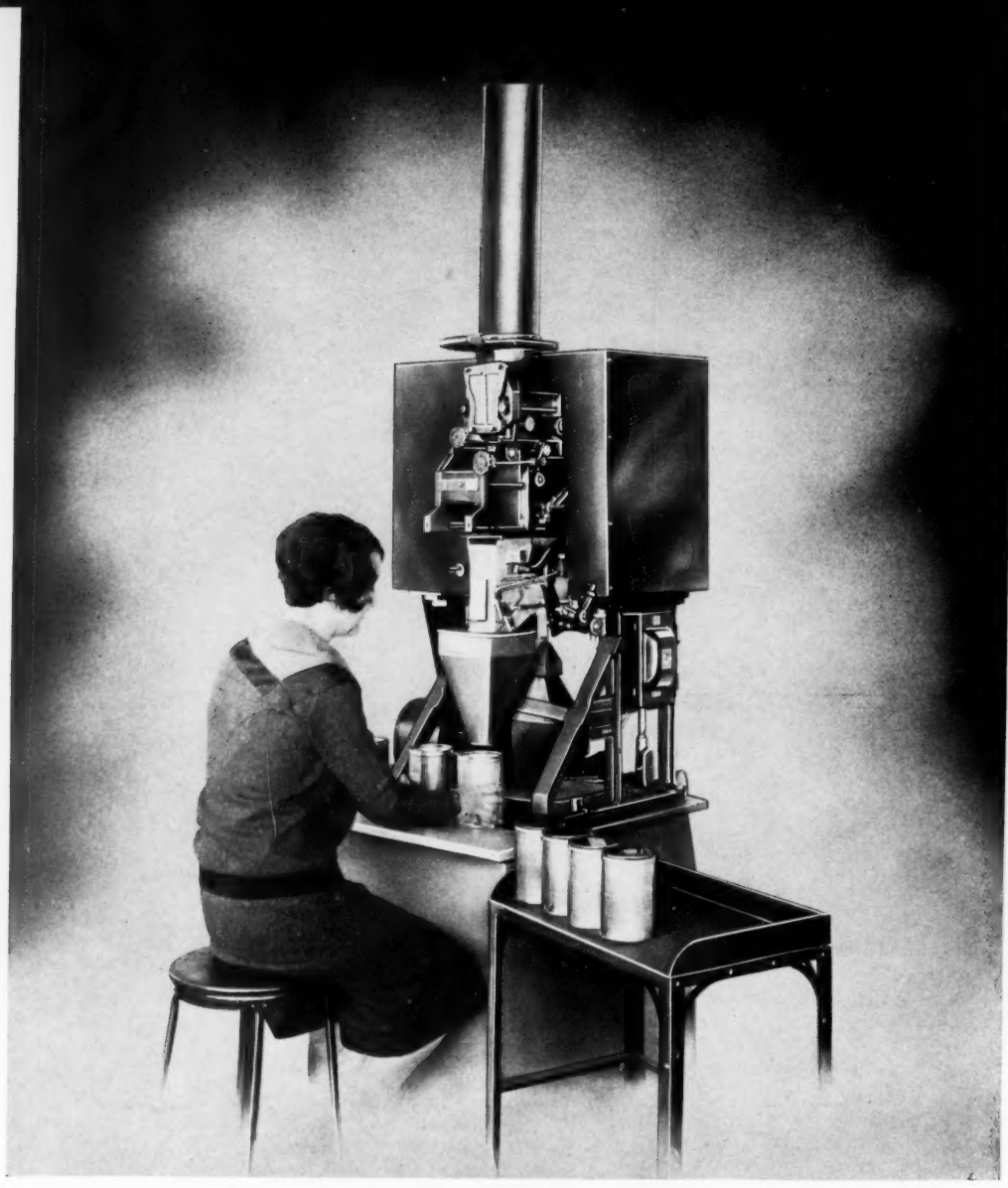

SEMI-AUTOMATIC NET WEIGHT WEIGHER

Class No. 2312

The Pneumatic Semi-Automatic Net Weight Weigher was developed to meet the demand for a small inexpensive, yet thoroly accurate and reliable weighing machine.

Built to withstand hard usage, the same proved and accurate principles used in our higher priced, high speed machines, are utilized in this smaller unit.

To those packers with comparatively small production, who demand positive operation and accuracy in weights, this weighing machine is recommended.

Semi-Automatic carton sealing machines to be operated with this semi-automatic Weigher are included in our line of standard equipment. Details furnished on application.

SPECIFICATIONS

RANGE—Will handle round and rectangular containers of the following sizes:

Round

Minimum—1½" Dia. x 2½" high. Maximum—6¾" Dia. x 13-15/16" high.

Rectangular

Minimum—1" x 2" x 2½" high. Maximum—4" x 7" x 13-15/16" high (from bottom score line to top flap).

Maximum Capacity of either round or rectangular cartons not exceed 200 cubic inches.

EQUIPMENT—Equipped for one size. Equipment for additional sizes extra.

SPEED—15 per minute.

ACCURACY—1/16 oz. plus or minus weight specified.

FLOOR SPACE—2'3" x 3'1" x 8'7" high including table (not furnished).

OPERATOR—One operator required.

WEIGHT—Domestic Shipping—750 lbs.

HORSEPOWER—¼ HP motor required. Price of machine includes motor.

ADJUSTABILITY—About 30 minutes required to change from one size to another.

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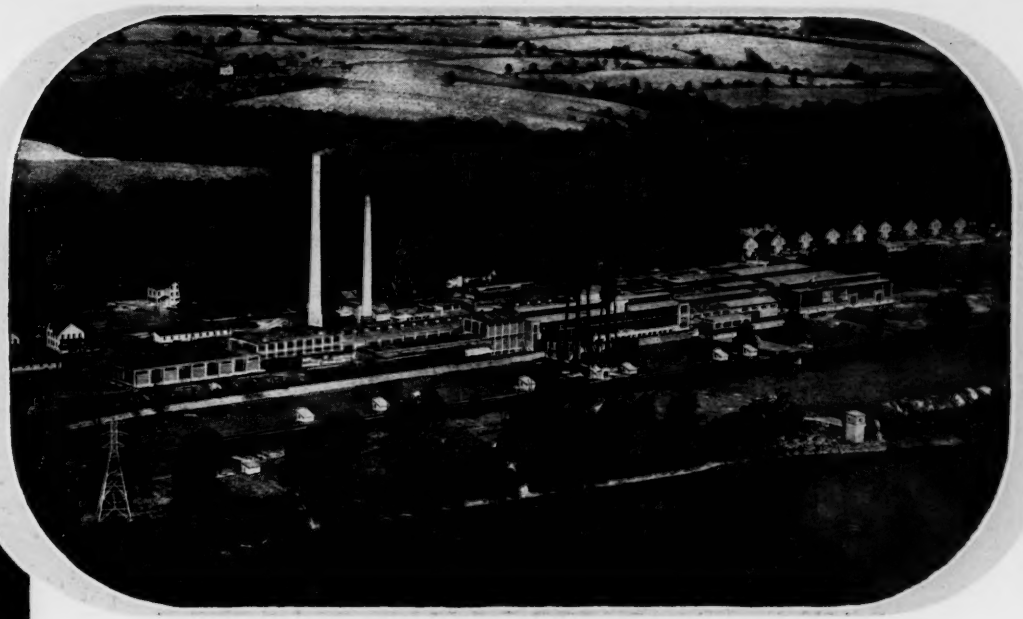


PAPER TO MEET *Your* PACKAGING NEED

NOT long ago it was thought that one or two papers might easily be used for every packaging need. Today the growth of packaging has resulted in a keener analysis of packaging problems. In the one Riegel Mill shown above—the largest of its kind in the world—over 100 different papers are made to fit the specific packaging needs of various manufacturers. Cocoanut, gelatin, pipe tobacco, cake, coffee, cereal, soap, pharmaceuticals, textiles—countless industries each have their special wrapping and lining problems which have been solved economically by a Riegel Paper.

If you're faced by some production problem, bringing out a new package, dressing up an old one, or just frankly trying to cut your packaging costs—write us your story today. To manufacturer, printer or advertising agency we offer unbiased advice based on experience and research work in many fields, without charge of course.

OUR PORTFOLIO OF PACKAGING PAPERS SENT ON REQUEST

RIEGEL PAPER CORPORATION

342 Madison Avenue, New York, N. Y.

PACKAGING DATA ON PHYSICAL QUALITIES OF RIEGEL PAPERS SAMPLED HEREIN

The following table shows the comparative qualities of the papers contained in this portfolio. In addition, there are other general advantages applying to all Riegel lines. They work rapidly and economically on automatic packaging machines. They will not dry out and crack. They are furnished in sheets or rolls of any size. They are correctly priced.

No.	Grade	Std. Wts. (per 500 sheet rm. of size 24x36)	Transparency	Resistance to: Grease or Oil	Resistance to: Moisture	Sealing: Heat or Glue	Other Qualities	General Use
1	Riegeline	20-25-30	High	High	Slight	Glue	Twists well. Very econom. Pliable	Outer carton wraps and bags. Bottle wraps.
2	Riegelite	23	High	High	High	Heat	Low-cost. Pliable. Crack-proof	Outer wraps and bags for food products needing moisture resistance or retention.
3	Greaseproof Parchment	25-30-40-60	None	High	Slight	Glue	Grease cannot penetrate or spot	Ham and bacon wraps. Carton lining. Xmas cards. Corrugating.
4	Laminated Riegeline	33	Moderate	High	High	Glue	Inner wax layer gives moisture protection without surface wax.	Carton lining. Pipe tobacco pkgs. Moisture-proof bags.
5	Amber Glassine	25-29	None	High	Slight	Glue	High grease resistance at low cost.	Carton liners. Coffee bag lining.
6	Celoglaze	25-30-40-50	Slight	Moderate	Slight	Glue	Cheapest Bleached Glassine	Carton lining. Low cost bags and envs. not needing transparency.
7	Colored Glassine	25 (7 colors)	None	High	Slight	Glue	Light-proof	Corrugated padding. Bottle and package wraps.
8	Opal Glassine	25-30-40	Slight	High	Slight	Glue		Bag and carton lining.
9	Embossed Glassine	25 (5 designs)	Slight	High	Slight	Glue	Decorative appeal	Bags, envelopes and outer wraps.
10	Celowax (Waxed 1 side)	27	Slight	High	Moderate	Both		Wax lined bags. Carton lining.
11	Waxed Amber	29-33	Slight	High	High	Heat	High moist. resistance at low cost.	Carton liner for crackers, etc.
12	Manila Waxed Sulphite	35	Slight	Slight	Moderate	Heat		Carton lining.
13	Transp. Waxed Sulphite	24-30-34	High	Moderate	Moderate	Heat		Carton wraps.
14	Celowax	29	Slight	High	High	Heat		Carton liners.
15	Crystalon	—	None	Moderate	None	Glue	Novelty and decorative appeal	Box covers. Xmas cards.
16	Diafane	20-25	Moderate	High	Moderate	Both	Hard glossy surface. Not waxed.	Doughnut wraps. Pkg. wraps. Envelope windows.

PAPERS OR CONTAINERS NOT SAMPLED HEREIN

17	Bag Lining of No. 5 or No. 8	21	Window-front Bags	25	Laminated Sulphite Bag
18	Dry Waxed Sulphite	*22	Vegetable Parchment	26	Celoglaze Side Stock
19	Ordinary Waxed Sulphite	*23	No. 6 Laminated to Foil	*27	Foil
20	Printed Opaque Waxed Sulphite	*24	Unlined Tins	28	No. 6 Laminated like No. 4

*Not manufactured by this company. Information gladly furnished.

LIST OF PRODUCTS, AND PAPERS RECOMMENDED FOR THEIR PACKAGING

(All Recommendations Based on Similar Use by Recognized Manufacturers)

Numbers refer to Items listed above. Recommendations indicate grade used, although frequently in a weight different from the sample herein.

	Packages: Inner Wraps	Packages: Outer Wraps	Bags or Envelopes	Special
Bacon	6-7	1-10	—	1-3-16
Bottle Wraps	—	1-7	—	—
Box Covers	—	15	—	—
Box Leaves	1-7-9-15	—	—	—
Box Lining—Fancy	9-15	—	—	—
Greaseproof	3-5-6-8	—	—	—
Moistureproof	10-11-14	—	—	—
Bread	—	—	—	20
Bread Sticks	—	1	—	1-2-6
Butter	—	—	—	22
Cakes and Cookies	—	2	2-4	—
Candy Bars	6-19-27	1-2-13	—	—
—Penny	—	1-6	—	—
Candy—Boxed	9-13	1-16-19	—	—
—Bulk	—	—	—	—
Candy Cups	—	—	—	7
Cereals	14	2-13-14	—	—
Cheese	—	27	—	23
Cigarette Cartons	—	12-13-14	—	—
Cocoa	8	—	—	24
Cocoanut—Shredded	14	2-13	—	—
Coffee—Bags or Cartons	5-8	—	—	17
Collars—Soft	—	—	1	—
Corrugated Padding	—	—	—	3-7
Cough Drops	—	2-12-13	2-4	—
Crackers—Paper Containers	3-11	1-2-13	1-4	—
—Tin Containers	3-14	1	—	—
Dates	14-19	2	—	—
Doughnuts	—	1-16	1-16	—
Drugs	3-4-11-19	1-7-9	1-6	—
Envelopes—Sampling	—	—	1-6	—
Envelopes—Window	—	—	—	1-16
Flour—Prepared	10	—	—	—
Frozen Confections	—	27	9	—
Frozen Fruits	16	1	—	—
Fruits—Dried	12	1	—	—
Gelatin Powder	—	—	—	—
Greeting Cards	—	—	—	3-15
Ham—Whole, Cured	—	3-9	—	—
Health Foods	3-19	1-2-13	—	—
Ice Cream	22	—	—	—
Insecticides	8-19	1-7-13	—	—
Lard	—	—	3	22
Macaroni and Noodles	18	—	1-4	21
Napkins—Paper	—	1-9	—	—
Oleomargarine	3	—	—	—
Pies	—	—	1-21	—
Potato Chips	11-14	1-13	2	—
Pretzels	10	1-2-6-13	1-4	—
Rice	6-10	1	—	—
Rolls—Pan	—	2	2-4-6	20
Shirts	—	1	1-21	—
Soap—Cake	6-8	1	—	—
—Chips and Powder	12-14	13	—	—
Spices	10-12-14	1-2-13	—	—
Stocking Wraps	—	1	9-15	—
Sugar	14-19	—	—	—
Tea	10	1-2	—	—
Tobacco—Chewing	4-18-23	1	—	—
—Pipe	4-18-23	1	—	—
Toothpaste	—	1	—	—
Window-Front Bags	—	—	—	26

RIEGEL PAPER CORPORATION

342 MADISON AVENUE, NEW YORK

Liberal Working Samples of any of these Papers sent without charge. Please state Name and Number of Paper, and Size of Sheet desired.

XUM

XUM

There is a

RIEGEL PAPER

FOR EVERY PACKAGING NEED

THE Riegel Mills make the widest variety of packaging papers in the country. In addition to standard grades, an endless chain of special papers are made to fit the specific needs of individual manufacturers.

The samples shown herein are a few of our most popular grades together with information as to their physical qualities. Whatever the requirement, there is a Riegel Paper adapted to your needs, or we can make one for you. Our mills are located for rapid service and our prices are designed for substantial savings.

RIEGEL PAPER CORPORATION

342 Madison Avenue, New York, N. Y.

PRINTED ON RIEGEL'S WHITE LEATHERET COVER – 20x26 – 130M LIGHTWEIGHT

Made in U. S. A.

XUM

NEW PACKAGING IDEAS

Above are shown a few of the many new containers embodying original ideas, which were created and produced by us in 1932.

The cotton dispenser cans, which were developed for one of the leading drug houses, are the last word in containers for the merchandising and dispensing of cotton for surgical purposes.

The three oval fibre cans are used as containers for talcum and other similar products. Furnished with any of several types of dredges, either in plain tin, nickeled tin, coated or lacquered.

The tiny drums are used as toys as well as advertising novelties and will do everything a regular snare drum will do. They can be furnished in many sizes.

These are just a few specimens to show the resourcefulness and mechanical ingenuity of our creative staff.

Let us study your packaging needs and offer some practical sales-building suggestions.

An improved aseptic package for surgical dressings. Patent applied for.

R. C. CAN CO.

Manufacturers of Round, Square, Oval and Oblong Paper and Fibre Cans.

ST. LOUIS, MO.

Branch Factories at Kansas City, and Rittman, Ohio

Remember
THESE FACTS
when considering plastics

Molded containers, closures, etc., must have . . . .

- unusual strength and toughness
- high gloss and permanancy of color
- freedom from odor
- non-hygroscropic qualities which eliminate moisture absorption and swelling
- pleasing colors and delicate shades

For these reasons we suggest that you specify "RESINOX" in the manufacture of your molded articles.

Resinox Products are . . . . . .

- Black and Brown molding powders
- Molding powders in Pastel Shades
- Synthetic Resins and Laminating Varnishes

RESINOX CORPORATION

A SUBSIDIARY OF COMMERCIAL SOLVENTS CORPORATION
AND CORN PRODUCTS REFINING CO.

230 PARK AVENUE NEW YORK CITY

RESINOX

XUM

Show Them Your Product IN THE STORE.....

that's where sales are made!

CONSUMERS are more particular today than ever before about how they spend their dwindling dollars—"Shopping" is no longer a whim—its become an accepted American Habit.

Retailers need not be sold on the sales building value of proper displays—they fully appreciate and gladly use good ones in their windows, on counters, tables and show cases.

But in the competitive "battle of the brands," that is being waged in every retail store in America, retailers give preference to those displays that are built to meet their needs—

ECONOMY OF DISPLAY SPACE
ATTRACTIVENESS OF DISPLAY
DIRECT TIE-IN WITH THE PRODUCT
ATTENTION VALUE THAT MAKES SHOPPERS STOP—LOOK—BUY

with little time required from the dealer or his clerks—these are but the beginnings of the elements demanded.

The R-T-G Organization embraces a complete staff, trained in retail merchandising, whose business is to assist manufacturers get their products SEEN, WANTED and BOUGHT, through the use of distinctive folding packages, display and dispensing containers and die-cut displays.

A FEW "case histories," selected from the hundreds in our files, readily indicate the type and extent of service available from R-T-G packaging and display specialists—

ASPIRIN—A new type dispenser, holding 24—10c tins, to be used either as a counter or wall display—The third re-order in a single year indicates its effectiveness in making sales.

AUTO PARTS—A highly individual package for a new product, plus a counter display container holding 12 units, which enabled the manufacturer to secure immediate and wide distribution.

BUTTER—A paraffined carton, holding six sticks to the pound—to meet the demand of grocers in a large city for units of butter to be sold at 5c each.

CHOCOLATE SYRUP—Catering to "home made" desserts, this counter display temptingly invites the housewife to bring new and tasty delights to her family.

FACE POWDER—A beautiful counter display holding eight 50c boxes—meeting enthusiastic success with all classes of druggists.

FLAVORING EXTRACTS—A display container holding twelve 2 oz. bottles—featuring a distinct appetite appeal.

MACARONI—A colorful folding carton for a 10c product—design scheme adaptable to three related products—Featuring a foreign appeal for the Italian trade.

PATENT MEDICINE—A new design, being the third step toward the modernization of a well-known and widely distributed product—now enjoying prominent display.

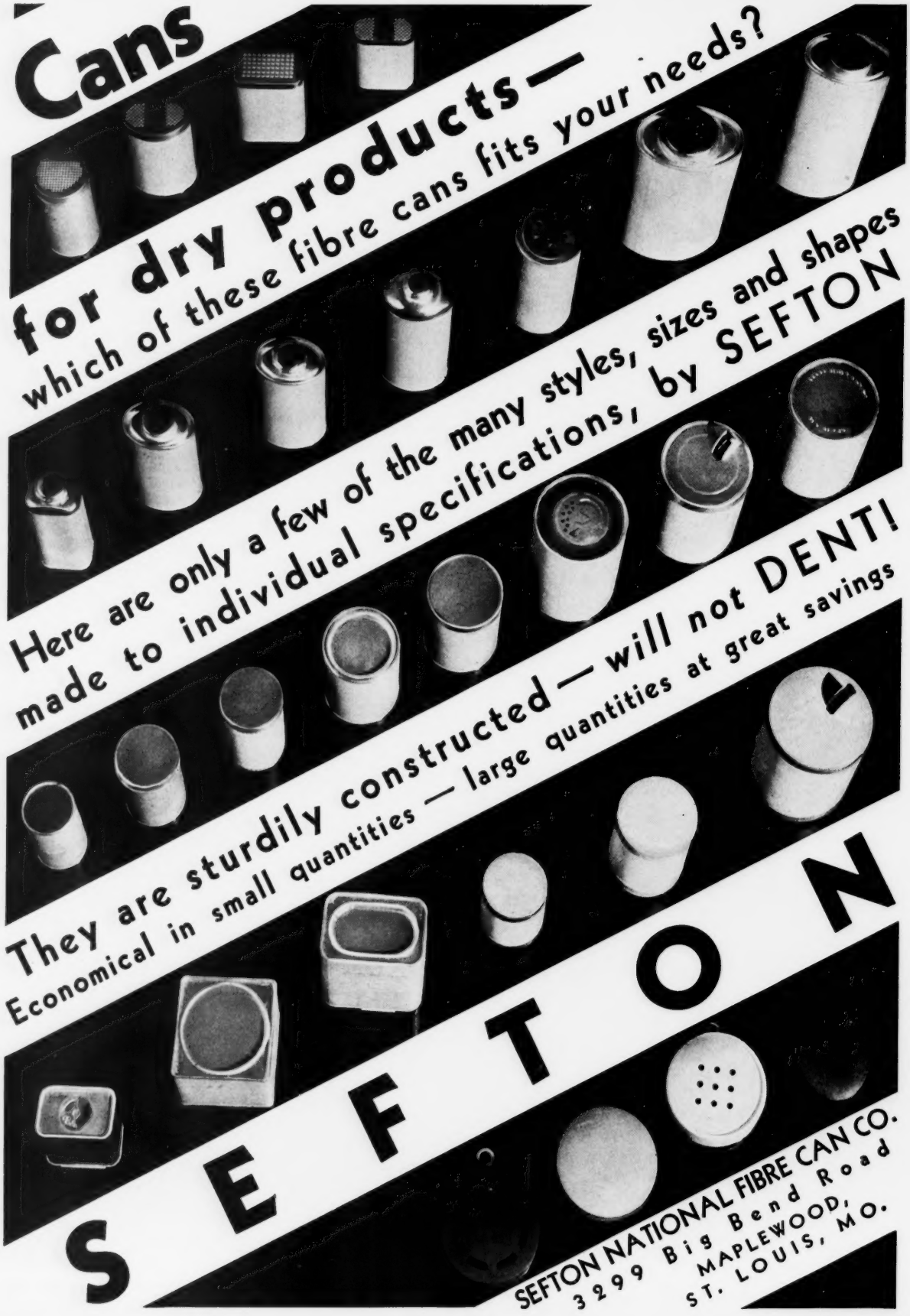
PERFUME—An individual and newly designed carton for a 25c package, enjoying wide sale in the Southern States.

SHOE POLISH—A complete design scheme for the packaging of 36 products—all bearing a family resemblance, ready identification, avoiding monotony and ready reception from new and old dealers.

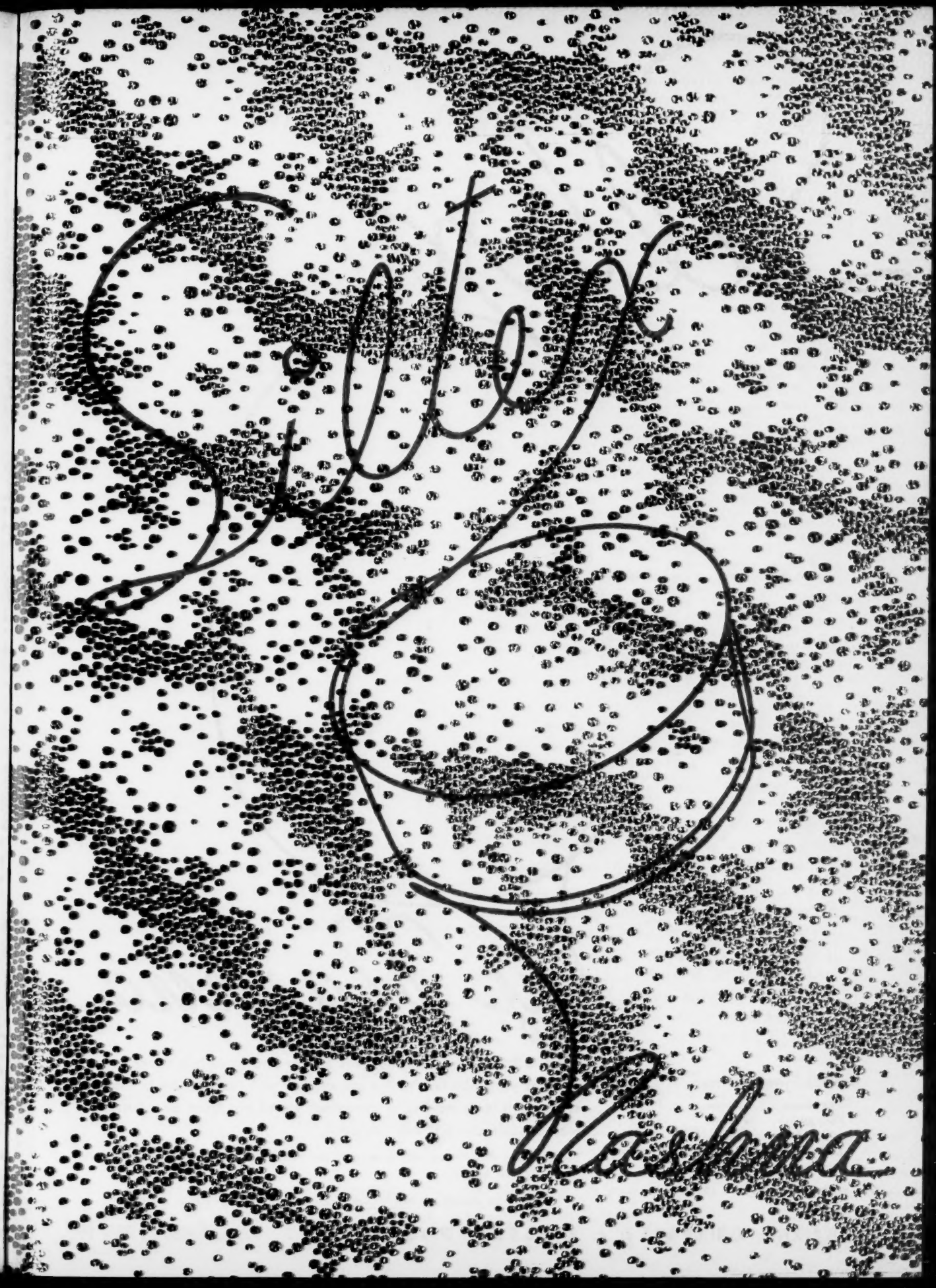
TOBACCO—Quickly set-up clever and economical dummy packages of the leading brands of cigarettes and smoking tobacco.

The Richardson-Taylor-Globe Corporation

Cincinnati, Ohio—4501 West Mitchell Ave. **New York, N. Y.—501 Fifth Ave.**


Cans
for dry products—
which of these fibre cans fits your needs?
Here are only a few of the many styles, sizes and shapes
made to individual specifications, by SEFTON
They are sturdily constructed — will not DENT!
Economical in small quantities — large quantities at great savings
SEFTON
SEFTON NATIONAL FIBRE CAN CO.
3299 Big Bend Road
MAPLEWOOD,
ST. LOUIS, MO.

XUM



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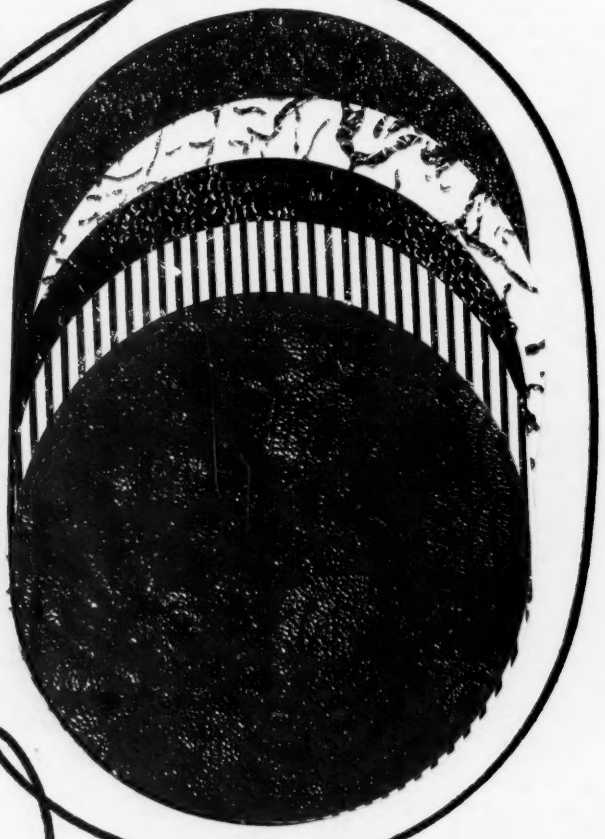


by Nashua

SAMPLES — from top down

777 Green . . . Morocco
796 White . . . Pigskin
789 Red . . . Morocco
800 White . . . Fern
775 Green . . . Morocco

THIS SHEET — 799 White . . . Pebble

If you will telephone to your box maker and have him cover two or three of your boxes with this paper, you will realize how brilliantly effective it is in making a container stand out from all others . . . with a positive "BUY ME" appeal.

The samples shown are only a part of the Siltex line, which includes a variety of colors and effects.

Your box maker probably has a complete line of Nashua samples.

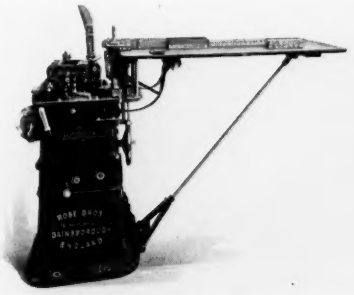
NASHUA GUMMED & COATED PAPER CO. *Nashua* . . **N. H.**

XUM

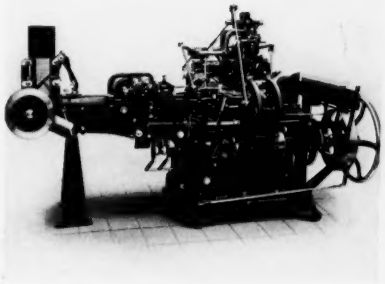
Efficiency . . . plus High speed

Automatic Packaging & Wrapping Machinery

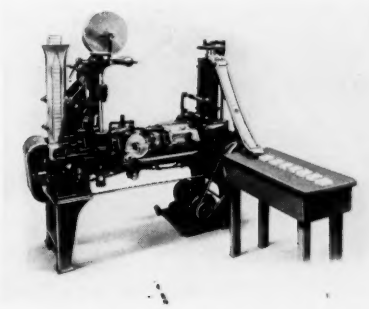
RAZOR BLADE WRAPPING MACHINE: Wraps 180 to 220 packages per minute in any cellulose wrapping material, glassine or waxed paper, making a tight seal. It will handle a package containing either six or twelve blades or any similar size package by means of easy adjustments.



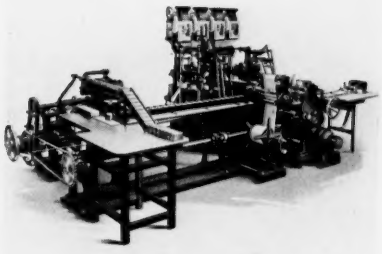
BAG MAKER AND LINER INSERTING MACHINE: This machine cuts, forms and pastes a complete bag either cylindrical or rectangular from a reel of paper stock and inserts it into the ready-made container at the rate of 55 to 65 per minute. Each bag is closed by a patented dust-proof lock seam. The complete packaging operation is carried out by attaching this machine to a Rose Weighing Machine suitable for the type of product to be handled.



PATENT "CELLOPHANE" OR GLASSINE WRAPPER: For wrapping a wide range of sizes of packets or boxes in cellulose material, glassine, waxed or parchment paper wrappers. Output 180 to 220 cigarette packets to 60 to 80 candy, biscuit or cheese cartons, according to size.



GRANULATED MATERIALS PACKING MACHINE: Equipped with electric weighers and a labeling attachment; this machine weighs a predetermined quantity of material and fills containers which are completely formed from a reel of cardboard or from previously cut and pasted cartons presented to it in a collapsed condition. It seals all the flaps of the carton and applies a three-quarter band label, covering all the seam and both ends. These operations are carried out at the rate of from 50 to 65 complete packages per minute.



SINCE 1885 the Rose Bros. automatic packaging machines have enjoyed the favor of many of the world's leading packers of tobaccos and food-products. Beginning with equipment for packing tobacco in cylindrical packets the line was gradually extended to the packaging of cigarettes, the wrapping of cigarettes and candy packages, and the packaging and wrapping of tea, coffee, cocoa, blueing, salt, soap, starch, cereals, powders, etc.

Today over 8,000 Rose Bros. machines are in use all over the world by tobacco, food-stuffs, soap and laundry supplies and razor blade manufacturers.

The formula upon which the success of the Rose Automatic Wrapping, Packaging and Weighing Machines is based, is simplicity of design, careful, accurate workmanship and high quality of material. Patented principles of operation assure high speed with a maximum of efficiency and low maintenance costs that are unequalled.

Special studies of particular requirements will be made upon request whenever any of these standard machines will not meet perfectly the conditions of any problem presented. All machines are sold under a guarantee to perform in strict accordance with specifications, and no installation is considered completed until our customers are satisfied with the results obtained.

Your inquiries are respectfully solicited.

ROSE BROS. (Gainsborough) **LTD.**

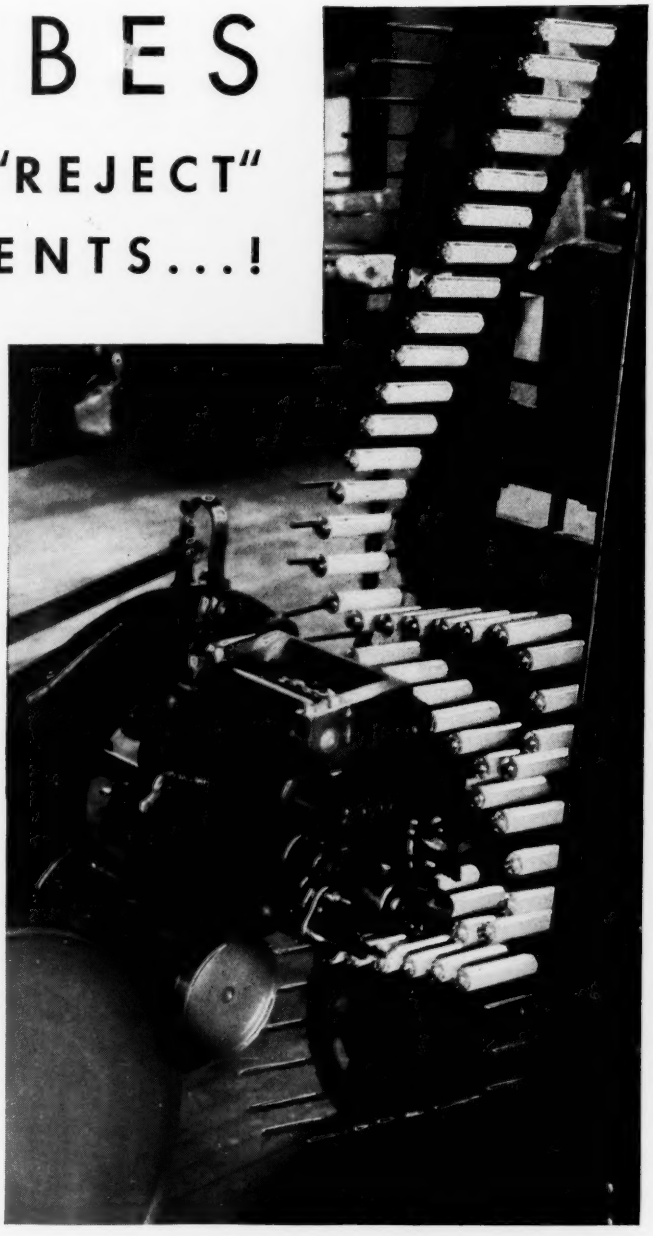
American Representative:

CRAGGS & SMITH, Inc.

5502-5524 Second Avenue, Brooklyn, N. Y., U. S. A.

MILLIONS OF TUBES

WITHOUT A "REJECT" BY OUR CLIENTS...!



Your *Product should be Packed with Just Such Care . . . . in* SUN TUBES

IN the plant of the Sun Tube Corporation at Hillside, New Jersey, highly skilled workers, using precision machines and modern processes, have been known to produce *millions* of Sun tubes without a single "reject" by our clients! Only by the utmost care, the most watchful supervision, the most careful testing and checking can such a reassuring record be maintained.

SUN TUBE CORPORATION

HILLSIDE, NEW JERSEY

XUM

STANLEY

Labels of **REAL METAL** *are beautiful, distinctive and low in "Result Cost".*

The Outside Evidence of Inside Quality

WE WILL DESIGN YOUR LABELS IN REAL METAL *Upon Request*

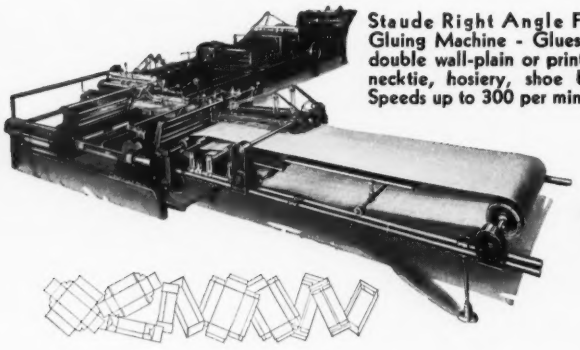
Write for the "CREST OF SALES"

The · STANLEY · MANUFACTURING · CO.

DAYTON, OHIO

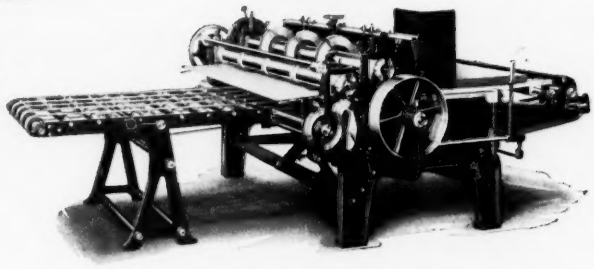
STAUDE FOLDING BOX GLUERS

Perform Economically, Continually, at Amazing High Speeds

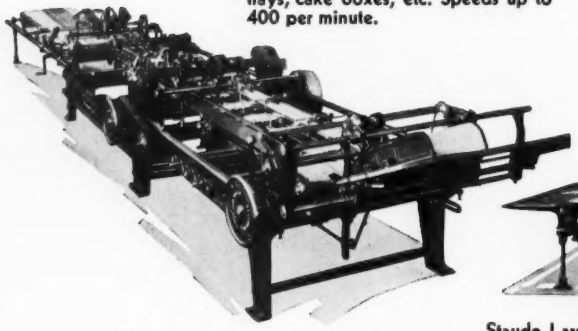


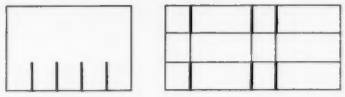
Staude Right Angle Folding Box Gluing Machine - Glues and folds double wall-plain or printed, candy, necktie, hosiery, shoe boxes, etc. Speeds up to 300 per minute.

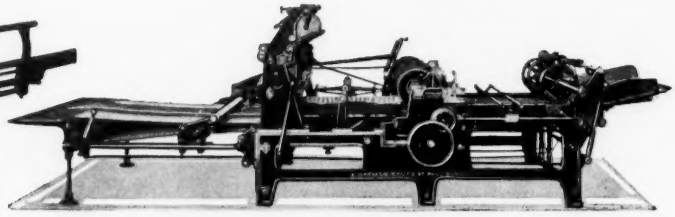
Staude Corrugated Container Slotter, Creaser and Slitter. Built in two sizes. 24" x 65" 30" x 75". Speeds up to 125 per minute.



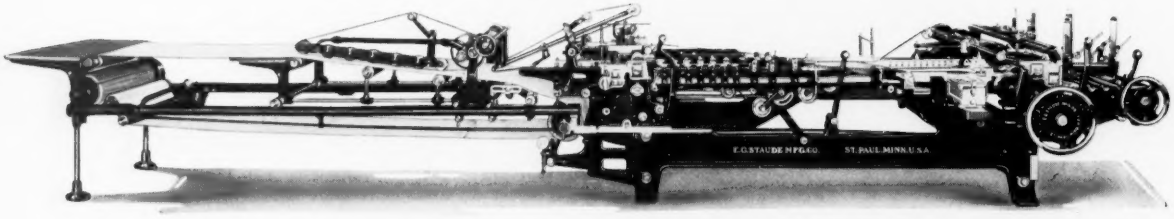
Staude Diagonal Folding Box Gluing Machine for gluing collapsible set-up type of boxes - such as bread trays, cake boxes, etc. Speeds up to 400 per minute.



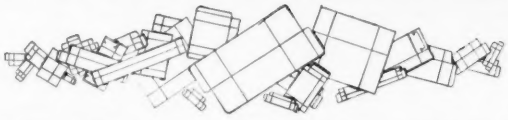




Staude Large Size Automatic Cellulose Gluing Machine - - for gluing Cellulose windows on carton blanks - - for lining carton blanks with Cellulose material. Speeds up to 400 per minute.



Staude Standard High Speed Heavy Duty Folding Box Gluer with Straight Line Delivery. Speeds up to 2000 per minute.



E. G. Staude Manufacturing Company

Manufacturers of high grade folding paper package machinery for more than thirty years.

ST. PAUL, MINN., U. S. A.

English Distributors:
Cameo (Machinery) Limited,
63 Farringdon Street, London, E. C. 4, England

French Distributors:
CAMCO,
20 rue Tourlaque
Paris, France

Canadian Distributors:
Toronto Type Foundry Co.
120 Wellington St., West, Toronto, Ont., Canada

XUM

F. J. STOKES MACHINE COMPANY

COLLAPSIBLE-TUBE, JAR AND POWDER FILLING EQUIPMENT

New York Office—
103 Park Avenue

5990 Tabor Road, Olney P. O.
PHILADELPHIA, PA.
Chicago Office—307 N. Michigan Ave.

Los Angeles Office—
1231 E. 7th Street

Powder Filler, 15-B (Basic Model)

PRODUCTS

Tube Filling Equipment
Jar and Can Filling Equipment
Powder Filling Equipment
Tablet and Pill Making Machines
Counting and Bottling Machines
Mixers—Kettles
Conveyors
Bottle Washers
Special Filling Machines

ADVISORY SERVICE

Our 37 years' experience in designing and building filling equipment for collapsible tubes, jars, cans, bottles, boxes and cartons enables us to recommend the most economical and efficient set-up for any product and, if necessary, the proper auxiliary equipment. This advisory service is available upon receipt of information on your production requirements and samples of material and containers. Special filling equipment developed for special products. ***Folders and booklets on request.***

CLIPLESS CLOSURE

The STOKES "Diamond Lock" Clipless Closure, covered by U. S. Patent No. 1,852,225 and other patents pending, which is applied by our 79-D, 79D-80A, and 90-D machines (see below) is of fine appearance and saves all clip costs. Tests show it to be more resistant to leaks than either the standard clip type closure or other types of clipless closures. This is due to the manner in which the "Diamond Lock" Closure weaves the metal together in a neat, tight seal without allowing the indentations to encroach upon the edges of the previously made folds. ***Send for a sample tube showing this new type of clipless closure.***

POWDER FILLING EQUIPMENT

STOKES Powder Fillers are designed so that the minimum investment in machinery will adequately equip the user. The 15-B Model can be converted and expanded to the 15-C or 15-E models, the fastest single-auger machines on the market. Besides the machines described below, other machines and attachments are available. ***Send for booklet.***

Powder Filler, 15-B (Basic Model)
Fills practically any powdered product into tins, boxes, bottles, cans and cartons of various shapes and sizes up to 12" in height. Capacity, 20 to 35 containers per minute. Exceptional accuracy and cleanliness insured by special auger-type filling mechanism, slow-motion agitator and two-step fill. Compactness and simplicity of design save floor space and time in operation. Easily cleaned and quickly "changed-over"; especially suited to the manufacturer with a varied line. As production grows, this machine does not need to be discarded but can be converted and expanded to a full automatic machine.

Powder Filler, 15-C (Full Automatic Model). A full-automatic model for large production and sampling. Can also be used as basic model for short runs or special products. Will fill 40 to 50 containers per minute, depending on size and shape of container and the material, and do a clean job. Holders which grasp the containers firmly without marring them, exact indexing and proper timing permit filling at these high speeds without spillage. This machine is the 15-B (basic model) converted and expanded by adding certain attachments such as the container carrier, the "no-can-no-fill" control, and the conveyor and the capper, if desired. One operator required for filling; two for filling and capping.

Powder Filler 15-C (Full Automatic Model)

Powder Filler, 15-E— Especially suitable for filling small containers such as face powder boxes. Has all the features of the 15-C (see paragraph above) but operates at high speeds (60 or more per minute). Can be equipped with automatic "take-off" for filled containers.

Granular Attachment—For filling free-flowing products. No drip. Can be added or removed in 10 minutes.

Dust Collector— A suction dust-collecting nozzle for protecting operators from obnoxious or poisonous dust.

Packing Attachments—Packs containers from the bottom up and measures accurately the exact amount desired.

Weighing Attachment—An electrically controlled scale for weighing, instead of filling by volume, can be supplied if desired.

TUBE FILLING EQUIPMENT

We make a full line of hand- and power-operated tube filling and closing equipment. (See below.) The machine illustrated is our Full-Automatic Filling and Closing Machine, No. 90-D. It applies the "Diamond Lock" Clipless Closure described above and is a versatile production machine suitable for many different products and tube sizes or for large production on practically any liquid, semi-liquid or paste. Handles tubes as small as ⅜" in diameter and up to 1½x7". Capacity, 140 gross per 8-hour day. Accurate, clean, easily-adjusted and quickly "changed-over." Requires but one operator. Thumb-screw adjustments for fill, "no-tube-no fill" device, special forming device for insuring neat, tight folds, guarded moving parts and base-housed motor—these are a few of many advantageous features. Rugged construction shown by weight (2000 lbs.). ***Send for folder.***

Tube and Jar Filler, No. 2-C—Handles any material from a liquid to a heavy paste and fills tubes or jars as desired by using proper nozzles and hoppers. Piston-pump type of filling mechanism. Output, 20 to 40 per minute. Belt or motor driven.

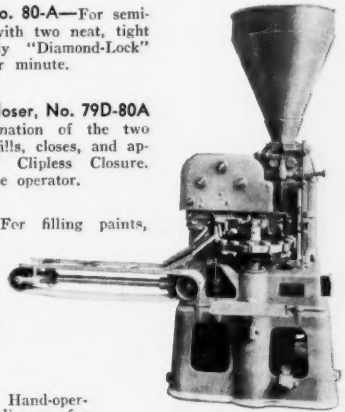
Tube Closing Machine, No. 79-D—Makes a neat, tight fold and applies the STOKES "Diamond Lock" Clipless Closure. One operator required; output, 25 to 40 per minute. Belt or motor driven.

Tube Filler and Closer, No. 80-A—For semi-liquids. Fills and closes with two neat, tight folds, but does not apply "Diamond-Lock" Closure. Output, 35-40 per minute.

Combination Filler and Closer, No. 79D-80A
For semi-liquids; a combination of the two machines described above; fills, closes, and applies the "Diamond-Lock" Clipless Closure. Output 30 per minute. One operator.

Simplex Filling Machine—For filling paints, varnishes, oils, food products, etc., into large size tubes, cans and jars. Easily and quickly cleaned and "changed-over." Will fill containers up to 5-gallon capacity. Output, 35 to 40 per minute.

Other Filling Equipment. Hand-operated fillers, closers and clippers for the small manufacturer and for experimental work; special filling machines for special products. Special nozzles, hoppers, and metals furnished to meet individual requirements.



Full Automatic Tube Filler and Closer, 90-D (Applies the STOKES "Diamond Lock" Clipless Closure)

TEXTILEATHER
THE CUSTOM BUILT COATED FABRIC
NOT LEATHER

is the Trade-Mark that identifies a wide variety of covering materials developed for specific purposes to meet exacting requirements perfectly and economically.

Realizing the need of something to stimulate sales, more and more manufacturers are changing the manner of presenting their products to consumers.

Many nationally known products have gained added prestige and increased volume thru the use of Textileather-covered Dual-Purpose boxes.

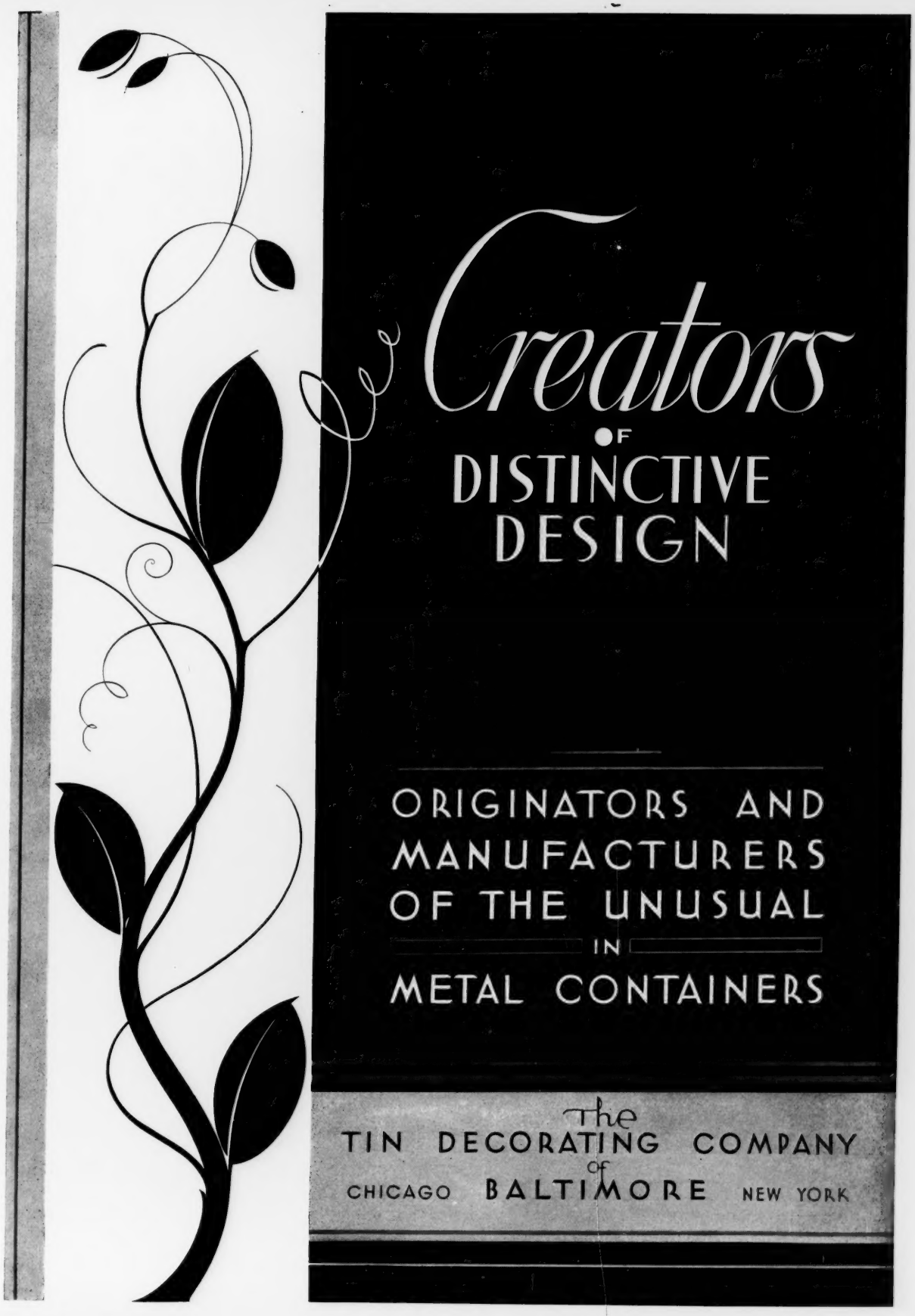
The richness and antiquity of the Florentine chest with its heavy embossing and wealth of color can best be reproduced thru TEXTILOID, a quality especially developed for deep embossing and superfinishing.

Two boxes of this type, a silver chest and a stationery box designed and made by Eastern Paper Box Company of Detroit, are illustrated.

As a covering for Utility Containers for unit sale merchandise, TEXTILEATHER is unsurpassed. A permanent washable surface, great resistance to scuffing and maximum adaptability are combined with beauty and character in finished appearance.

TEXTILEATHER CORPORATION
TOLEDO - OHIO

XUM


Creators
OF
DISTINCTIVE
DESIGN
ORIGINATORS AND
MANUFACTURERS
OF THE UNUSUAL
IN
METAL CONTAINERS
The
TIN DECORATING COMPANY
CHICAGO BALTIMORE NEW YORK

...BUT DO WE **DARE** TAMPER WITH THE QUALITY OF OUR PRODUCT?"

For the merchant who is baffled by the problem of further reducing his costs, there remains one *safe* avenue that ought to be explored — one that won't change the quality of his product an iota, but will let him sell that product at a more competitive price — *and reduce his packing costs.* • Nor need sales appeal of the package suffer, either. • Frankly, neither you nor we can tell how great the saving may be...until your product and its needs have been surveyed and analyzed. A simple request from you, and Union's packaging experts will go over your situation to determine the possibility of specific savings, either in the packing method or in the package itself, at no cost or obligation.

UNION Paper CONTAINERS

☆

FOR LOW COST PACKAGING

UNION BAG AND PAPER CORPORATION

GENERAL OFFICES • WOOLWORTH BUILDING • NEW YORK CITY

XUM

U. S. BOTTLERS MACHINERY CO.

EXECUTIVE OFFICES AND FACTORY

4015-31 N. ROCKWELL ST., CHICAGO, ILLINOIS

New York San Francisco

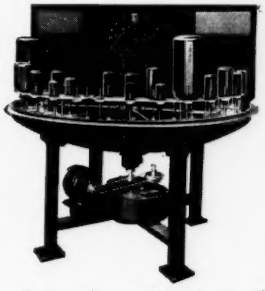
"Our Equipment Produces
MORE OUTPUT WITH LESS LABOR"

MANUFACTURERS OF

Cappers	Pasteurizers
Conveyors	Preheaters
Corkers	Rinsers
Dryers	Sterilizers
Fillers	Tanks
Filters	Washers

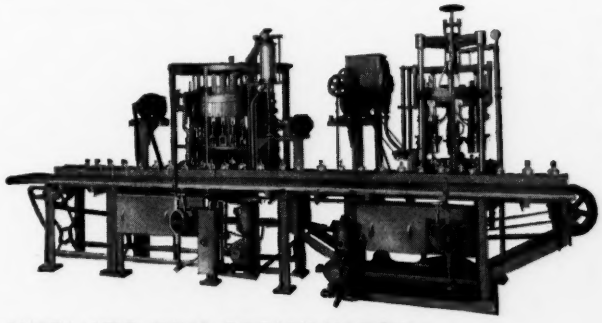
U. S. COMBINATION OUTFIT NO. 4

Consists of U. S. Siphon Principle Filler, U. S. Multiple Drum Disc Filter and U. S. Bronze Pump belted to electric motor. Makes a complete, compact pumping, filtering and filling outfit. Is ideal for free-flowing products. Combination outfits can be obtained in three sizes and several different combinations. All of the individual units can be obtained separately, if so desired.



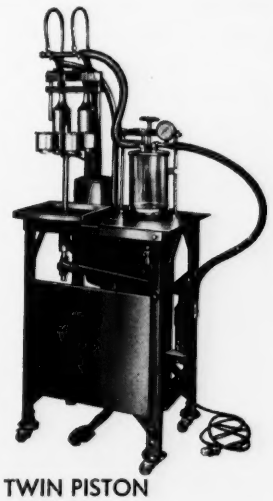
U. S. REVOLVING WASHING, RINSING AND STERILIZING MACHINE

Has a capacity of from 60 to 120 bottles per minute depending on size, style and shape. Ideal for either cans or bottles. Fully automatic straight line washers can also be furnished for handling cans or bottles. and can be arranged to discharge automatically to either automatic fillers or automatic dryers, if so desired.



AUTOMATIC IDEAL ROTARY VACCUM FILLER AND HOPPER FEED CAPPER

A very satisfactory filling machine for all liquid products and most all semi-liquid products. These machines have a capacity of from 60 to 120 containers per minute and can be furnished to take care of practically any filling problem. If your problem is corking instead of capping, the U. S. Ideal Rotary Corker can be arranged to hook up to the discharge of the Filler in place of the Rotary Capper, as illustrated. We build a complete line of automatic machines to meet your requirements. Write us for full particulars.

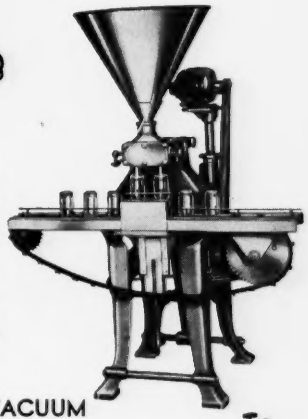


TWIN PISTON FILLER

The Twin Piston Filler is designed for handling viscous products such as mayonnaise, cottage cheese, preserves, marmalades, mustard, etc. This machine fills two containers at a time, from the bottom up. Capacity, 50 to 60 containers per minute.

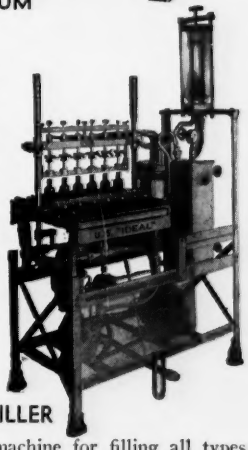
HAND VACUUM FILLER

The Model "B" Hand Vacuum Filler handles a wide range of free-flowing and semi-liquids. Additional filling heads can be supplied for handling products of a conflicting nature. Can also supply additional heads for filling the All-glass Sprinkler Top Bottles. This Filler is very compact, and as it is mounted on roller castors can readily be moved to any desired location on your bottling room floor.



U. S. STRAIGHT LINE VACUUM FILLER

Machine illustrated, semi-automatic, but can be arranged to discharge automatically to U. S. Capper or Corker Conveyor. Machine is an ideal unit for filling all types of liquid products and has a speed of 30 to 45 containers per minute. Liquid contact parts can be furnished in stainless steel, nickel, or hard rubber. We manufacture a complete line of Vacuum Fillers from the hand machine to the fully automatic rotaries and are glad to make recommendations to meet with your requirements.



U. S. ACME FILLER

An ideal machine for filling all types of free-flowing products into containers requiring accurate quantities. Ideal for the filling of cans. This machine is obtainable in three sizes. Can also be arranged to automatically discharge to a conveyor if desired. The machine to the left of rubber construction is ideal for handling products high in corrosive content. Combinations can be arranged to handle out of the ordinary filling requirements.

Send Us Sample Containers and Products for Recommendations.

USE TESTED UPACO ADHESIVES

Modern Industry Demands the Precision That Comes from Scientific Testing

A Special Form Available For Every Packaging Problem

Maximum production in the sealing of your packages—cartons, wraps, bags or labels—can be attained only when the adhesive is of the right formula.

Let us study your particular sealing problem and show you how readily you can obtain perfect results at high production speed by using the correct formula.

All that we require to aid you in your problem are a few samples of the materials on which the adhesive is used, and information as to the manner in which the work is done—whether by machine or hand operation.

Among the many adhesive problems we have solved for our customers is that of sealing moistureproof transparent cellulose. Our chemists have perfected adhesives which have proved remarkably successful on this type of material.

Consult us regarding the best adhesive for your packages. It will cost you nothing to get our recommendations together with a sample of the correct formula.

UNION PASTE CO.

MANUFACTURERS OF

UPACO ADHESIVES

200 Boston Avenue Medford, Mass.

XUM

METALON

TRADE MARK—PATENTS PENDING

BOXES

A NEW ADDITION TO THE WATERBURY LINE

By a new process developed by our engineers, we are able to make metal-covered boxes of unusual beauty at moderate cost. Metal of the correct hardness and thinness is applied to box board, thus combining the best features of both metal and paper boxes.

This special metal makes possible various kinds of decoration in different and interesting ways that are impossible in a paper box. The use of paper, in combination with metal, eliminates the sharp edges, and also makes for more attractive interiors.

We propose to maintain our reputation as leaders in the manufacture of paper boxes of outstanding style and originality, but are very desirous of showing you our latest development—METALON. A representative from our nearest office will gladly show you a METALON box to fit your requirements.

Waterbury Paper Box Company

Factory and Main Office, Waterbury, Conn.

New York Office
F. L. BUTZ,
H. T. WARREN
100 East 42nd St.

Chicago Office
CHARLES A. RINDELL, INC.
64 W. Randolph St.

San Francisco Office
CHAS. H. CURRY
1334 Van Ness Ave.

"When you think of boxes—think of Waterbury"

Let us make it of PLASTIC— OR METAL— or a combination of both!

For many articles—such as tray containers, lip sticks, etc., the use of metal for some parts and molded plastic (Bakelite, Durez, Beetle, etc.) for others—makes a pleasing combination . . .

We have complete facilities for the manufacture of such articles and shall be pleased to suggest ways in which you can use this combination to advantage.

Of course, we can also serve you if you require anything made of all-metal or all-plastic.

Whatever your needs,—containers, trays, closures,—we invite your inquiries. We will appreciate an opportunity to aid you in connection with any problems of this character.

MOLDED and METAL GOODS DIVISION

WATERBURY BUTTON COMPANY

ESTABLISHED 1812

WATERBURY • • • CONN.

MOISTUREPROOF SYLPHRAP

The Aristocrat of Tobacco Wraps

Crystal Clear	Moistureproof
Transparency	Self Sealing with Heat
Odorless	Strong and Pliable

These are some of the characteristics which make moistureproof SYLPHRAP the aristocratic wrap for tobacco,—also equally important for foods and other products requiring moistureproof protection.

SYLPHRAP is considered "Quality's Best Attire" for Food Products, Textiles, Pharmaceuticals, Stationery, Toys, and many other Products.

Write us for samples and suggestions for beautifying and safeguarding your products. Technical Service at your disposal.

SYLVANIA INDUSTRIAL CORPORATION

Executive and Sales Offices: 122 East 42nd Street, New York

Works: Fredericksburg, Va.

SYLPHRAP

From Coast to Coast

Candy is being wrapped in SYLPHRAP to preserve its delicious flavor and velvety texture, to realize its greatest possible potential selling power, and as an outer protection to the Candy box.

The crystal-clear transparency and the remarkable lustre of SYLPHRAP will show to best advantage the beautifully designed Holiday gift box, and make it an outstanding popular package on shelf or counter.

SYLPHRAP, plain or moisture-proof, is also used in window cartons for Candy, in Candy bags, bon-bon cups and many novelty combinations for showing the Candy to best advantage.

Made in plain white and moisture-proof and in eleven beautiful sparkling colors.

Write us for samples and prices.

SYLVANIA INDUSTRIAL CORPORATION

Executive and Sales office, 122 East 42nd Street, New York City

Works: Fredericksburg, Va.

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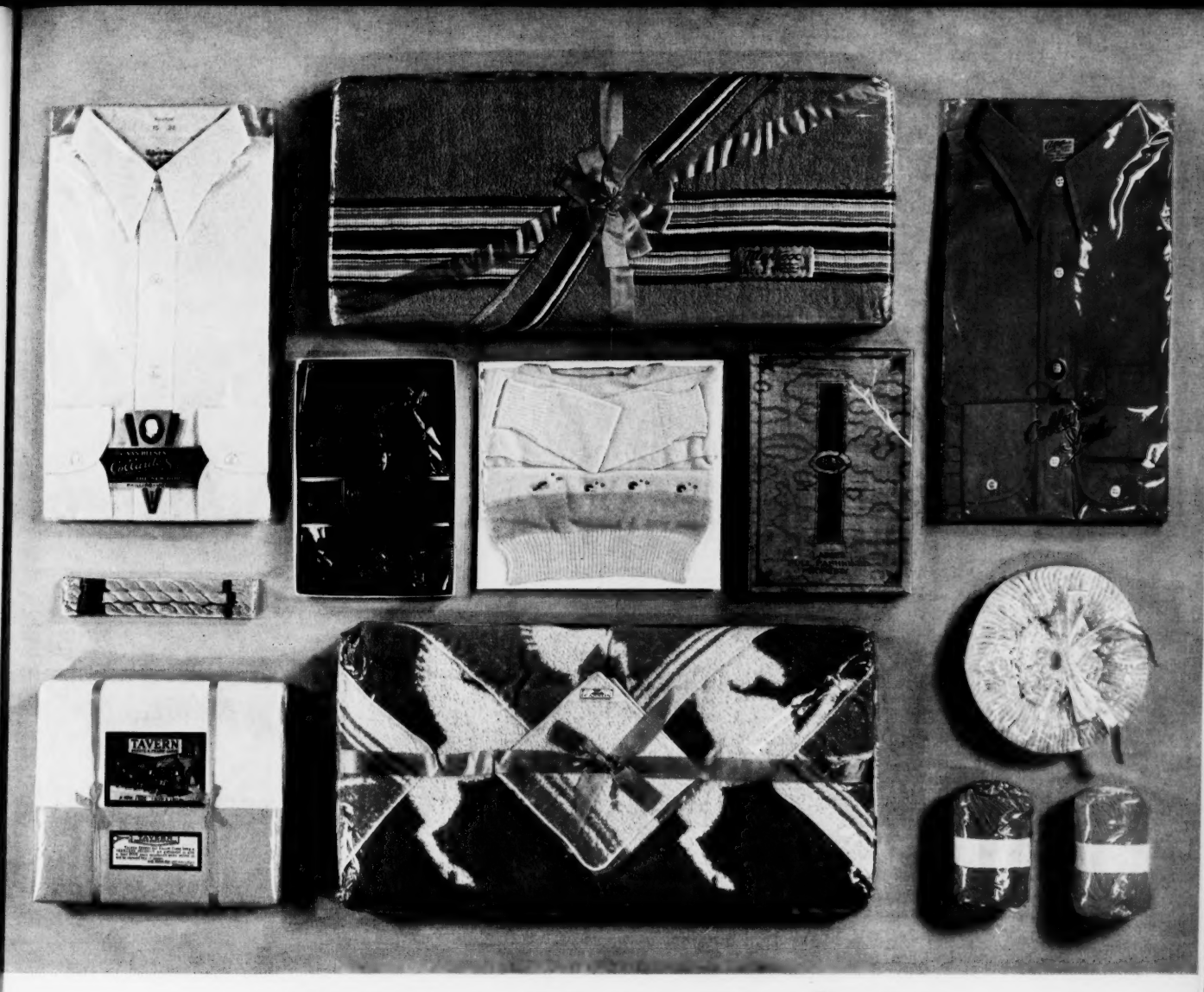


SYLPHRAP

Transparent Cellulose—Quality's Best Attire

SYLPHRAP is playing a most important role in the development and stimulation of sales of all Textiles—whether they be made from the filmy strands of the silken cocoon, the downy-like yarns from the mountain lamb, or the snow-white threads from the fields of cotton.

This crystal-clear wrap with the silver sheen will not only protect your products from dust and soil, but by revealing details of color, texture and design will lend to them that element of lure which will attract the discriminating shopper and go far in solving your display problems.

SYLPHRAP is made clear and colorless and in eleven beautiful, sparkling colors. Let us send you samples and quote you prices.

SYLVANIA INDUSTRIAL CORPORATION

Executive and Sales office, 122 East 42nd Street, New York City
Works: Fredericksburg, Va.

SYLPHRAP

Moistureproof and Self-sealing
FOR BAKERS EVERYWHERE

Ideal for

Breads
Cakes
Pies
Biscuits
Cookies
Pastries

To meet to-day's competition—to increase your sales—to maintain your product in all its crisp freshness—to increase its eye appeal and make it sell quickly—be sure it is wrapped in Moistureproof SYLPHRAP.

In addition to SYLPHRAP'S perfect transparency and moistureproofness, one of its outstanding qualities is its ability to self-seal with heat—whether by automatic wrapping machines or by hand—thereby eliminating the use of adhesives which might have a tendency to transmit a possible odor to the product.

Samples to fit your products upon request. Expert technical service at your disposal.

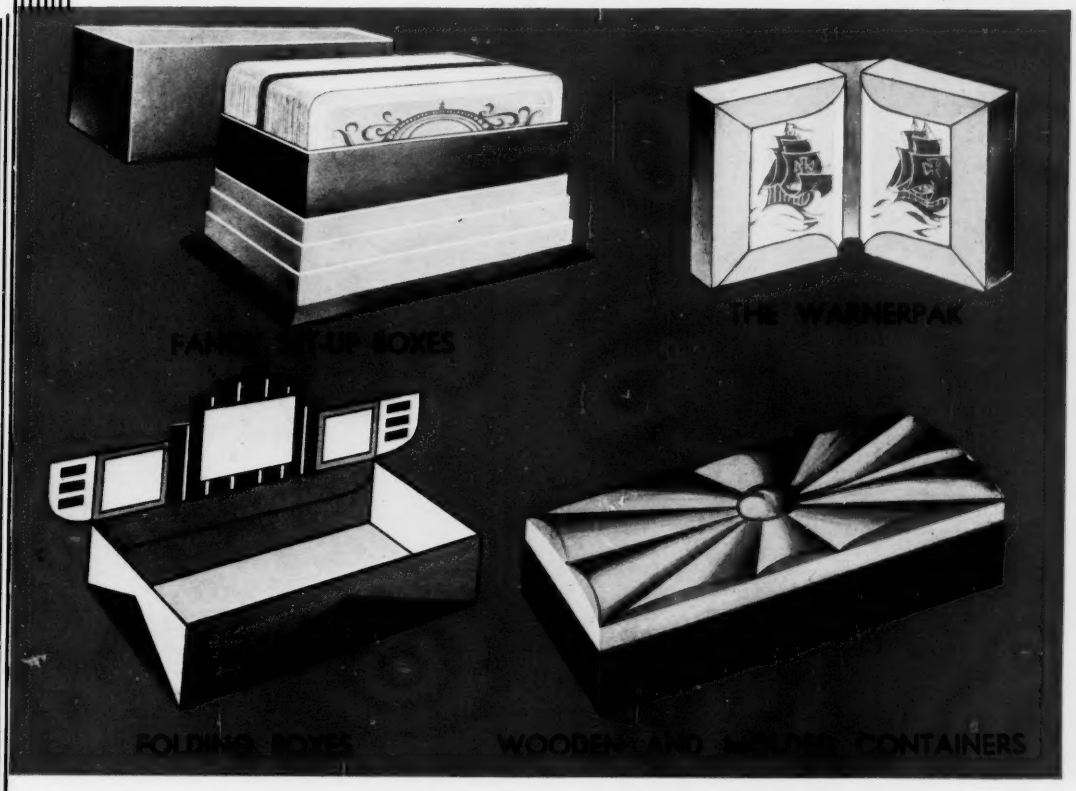
SYLVANIA INDUSTRIAL CORPORATION

Executive and Sales Offices: 122 East 42nd St., New York, N. Y.
Works: Fredericksburg, Va.

BRANCH SALES OFFICES:
201 Devonshire Street . . . . Boston, Mass.
1014 Glenn Building . . . . . Atlanta, Ga.
325 West Huron Street . . . . Chicago, Ill.

DISTRICT AGENCIES
Blake, Moffitt & Towne, 41 First Street . San Francisco, Calif.
Pollock Paper & Box Co. . . . . Dallas, Texas
Pollack Bros. & Co., Ltd., 420 Lagauchetiere St., W., Montreal, Can.

A COMPLETE LINE OF BOXES TO ANSWER EVERY KIND OF PACKAGING PROBLEM



EVERY packaging problem is different. In some cases a fancy set-up box is the most suitable method of packaging—in others, a folding box, a wooden box or a molded container will best serve the manufacturer's purpose.

The Warnercraft organization is in the unique position of being equipped to design and manufacture whatever type of package you require, and its recommendations, therefore, are absolutely unbiased.

Enlist the aid of Warnercraft and get the benefit of this organization's broad experience in all forms of packaging.

A representative will gladly call to discuss your packaging needs—without obligation.

FANCY SET UP PAPER BOXES

FOLDING BOXES

MOLDED BOXES & CONTAINERS

ARTISTS & DESIGNERS ALWAYS AT YOUR SERVICE

THE WARNER BROTHERS CO.

BRIDGEPORT CONN.

New York Office: 200 Madison Ave.

WARNERCRAFT

THE FINEST WORD IN PACKAGING

The Nation Reaches for WIRZ Tubes
More and more people reach for products in WIRZ Tubes—paste, ointment, semi-liquid, powdered and granular—because they have found WIRZ Tubes convenient, sanitary, easy-to-use, and economical. Consider WIRZ Tubes for that new product or stimulate sales of the old product—in a WIRZ Tube.
NIVEA
TRADE MARK REG. U.S. PAT. OFF.
CREME
Stacomb
The Luxurious Hair Dressing Makes Hair STAY COMBED
ASEPTIC NASAL EMOLLIENT
SETT & RAMSDELL
Perfect
FINISHING CREAM
Vanishing Cream for Finishing
Zonite
Ointment
Greaseless. Soothing Antiseptic Cream
ZONITE PRODUCTS
PALMOLIVE
shave cream

NEW YORK
30 E. 42nd St.

LOS ANGELES
1231 E. Seventh St.

HAVANA, CUBA
Roberto Ortiz Planos
Moenck & Quintana

CHICAGO
80 E. Jackson Blvd.

A. H. WIRZ, Inc.
CHESTER, PENNSYLVANIA

Established 1836
Collapsible Metal Tubes
Metal Sprinkler Tops

XUM

WIRZ TUBES Serve the Nation

NEW PRODUCTS and old products supply the Nation's needs in the factory, home, office, everywhere—in WIRZ Tubes.

They are made of only the best quality metal of uniform thickness. They protect the product to the last squeeze and they make a clean, economical, easy-to-use package which pleases the consumer.

Our experience includes tubes for ointments, pastes, semi-liquids, powdered and granular products.

Established 1836
Collapsible Metal Tubes
Metal Sprinkler Tops

A. H. WIRZ, Inc.
CHESTER, PENNSYLVANIA

LOS ANGELES
1231 E. Seventh St.

NEW YORK
30 E. 42nd St.

CHICAGO
80 E. Jackson Blvd.

HAVANA, CUBA
Roberto Ortiz Planos
Moenck & Quintana

CARTONS
—that advertise

This is one of our many innovations in modern packaging. Constructed to facilitate the use of its contents, this attractive carton is thus kept daily before the eyes of its purchaser. *THERE IS NO BETTER WAY TO ADVERTISE!*

BROOKS & PORTER, Inc.

CREATIVE PACKAGING • LITHOGRAPHED AND PRINTED

304 HUDSON STREET » » » NEW YORK

WALKER 5-9494*

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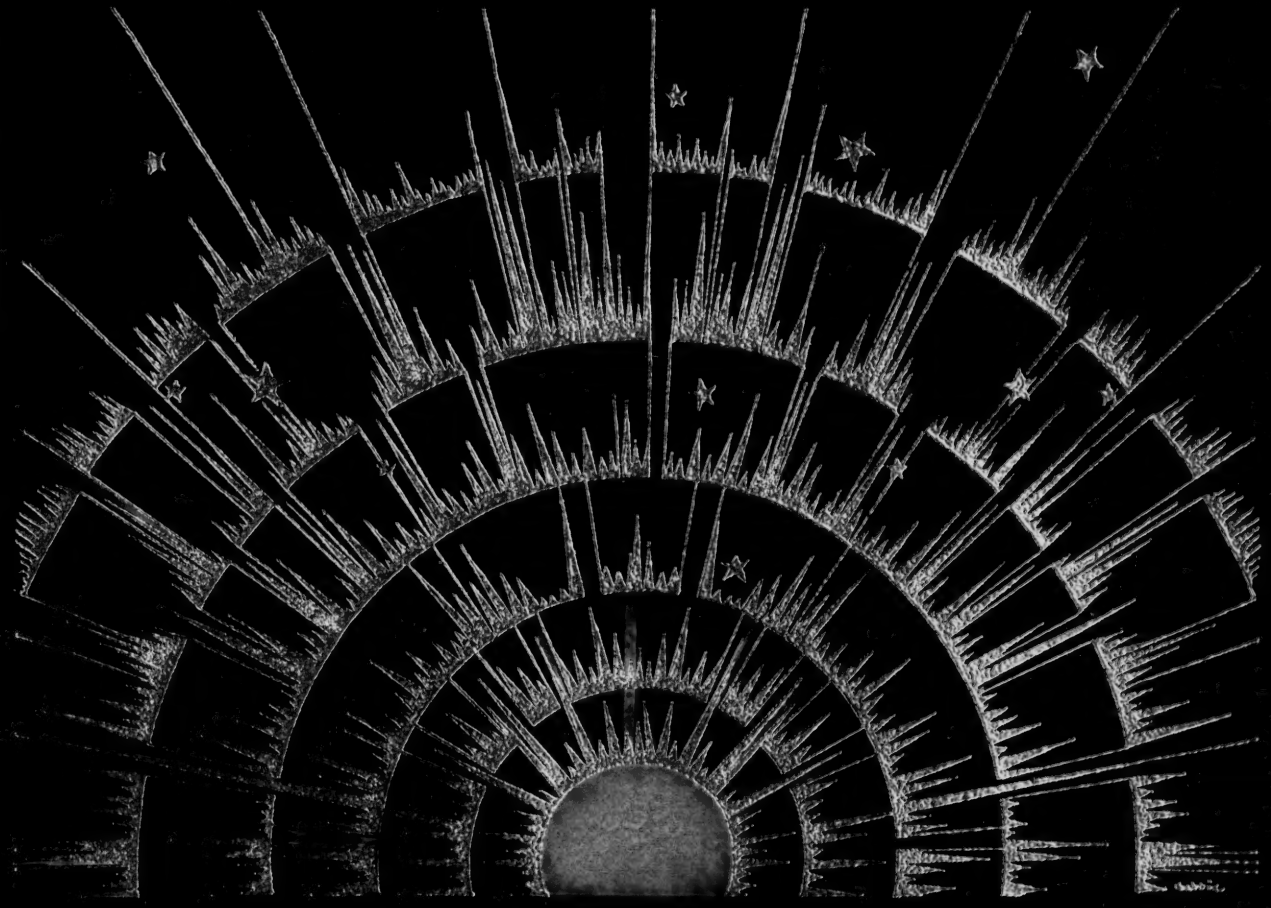


VOSS Boxes and Displays give character to the products they contain and create an unmistakable impression of quality and genuine worth.

Originality—with consideration for utility and practicability—emphasizes all VOSS designs.

We manufacture hand-made and some automatic boxes of the better class.

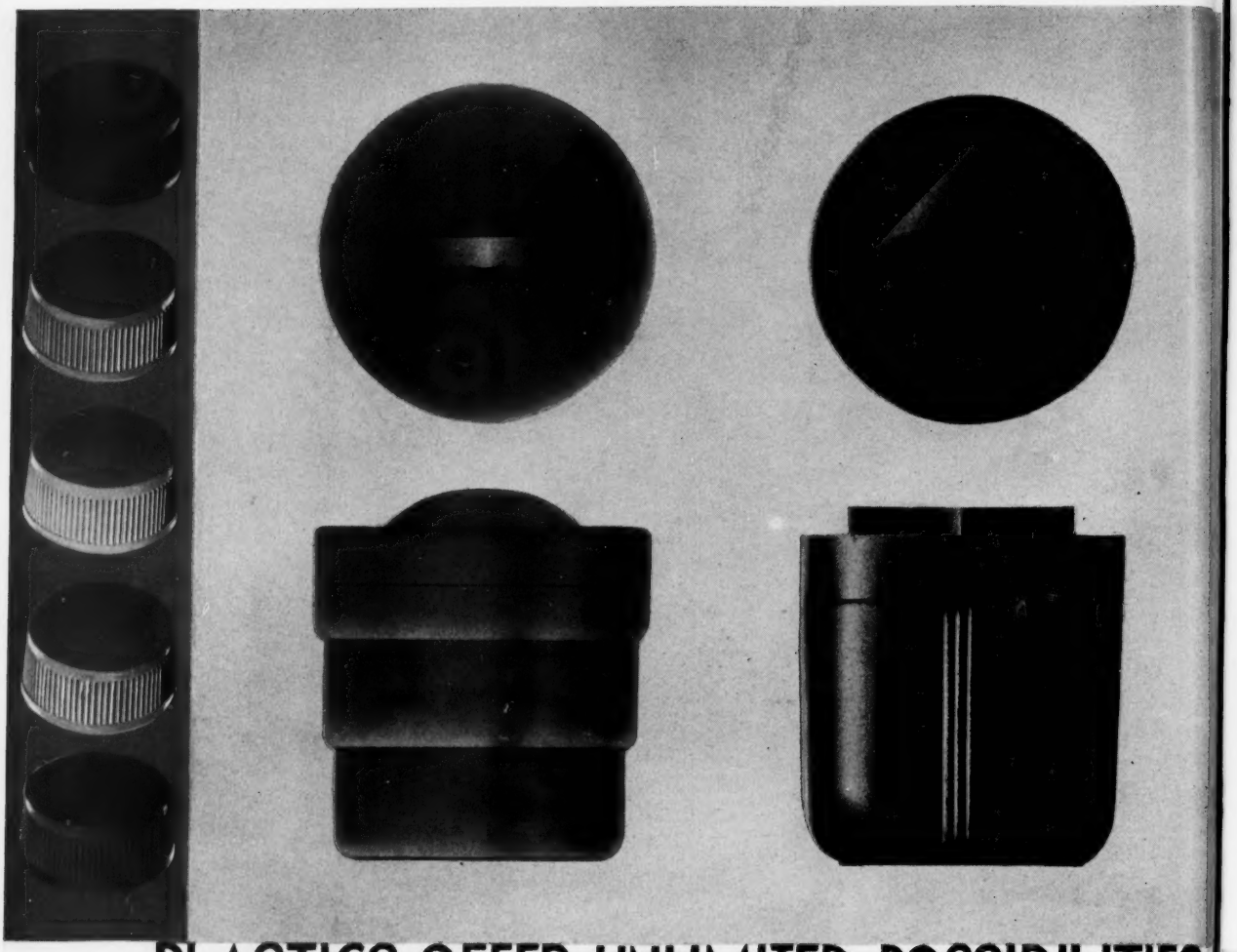
May we show you how an original, smartly designed VOSS box can increase the eye-value of your product?

KVC

KARL VOSS CORPORATION

Division of Shoup-Owens, Inc.

HOBOKEN · NEW JERSEY



PLASTICS OFFER UNLIMITED POSSIBILITIES

THE increasing use of plastics for containers and closures of every description is largely because of the adaptability of these materials to an infinite variety of designs.

Manufacturers who have heretofore felt that they were restricted to a plain, commonplace package, have discovered that containers of unusual charm and distinction can be molded of plastics and that they possess not only all of the essential qualities required, but have other valuable advantages—such as great strength, lightness in weight, and the appeal of color.

Our designers will welcome an opportunity to submit suggestions for a more modern and distinctive container for the merchandising of your product. A representative will gladly call to discuss your packaging requirements.

MANY manufacturers confronted with the problem of determining on a type of container to defeat the monotony of the ordinary, have found the answer in Columbia molded containers.

If you are seeking a more modern container that will enable you to present your product more attractively to consumers, let us show you what we have done for other concerns. Let us also tell you about our exceptional facilities for designing and producing molded articles, — our completely equipped tool room where we make all our dies and tools required in the molding of a product, — and the unusual proficiency of Columbia craftsmen in molding the most complex as well as the simplest designs.

Backed by almost a half-century's experience in this highly technical field, our organization is pre-eminently qualified to serve you.

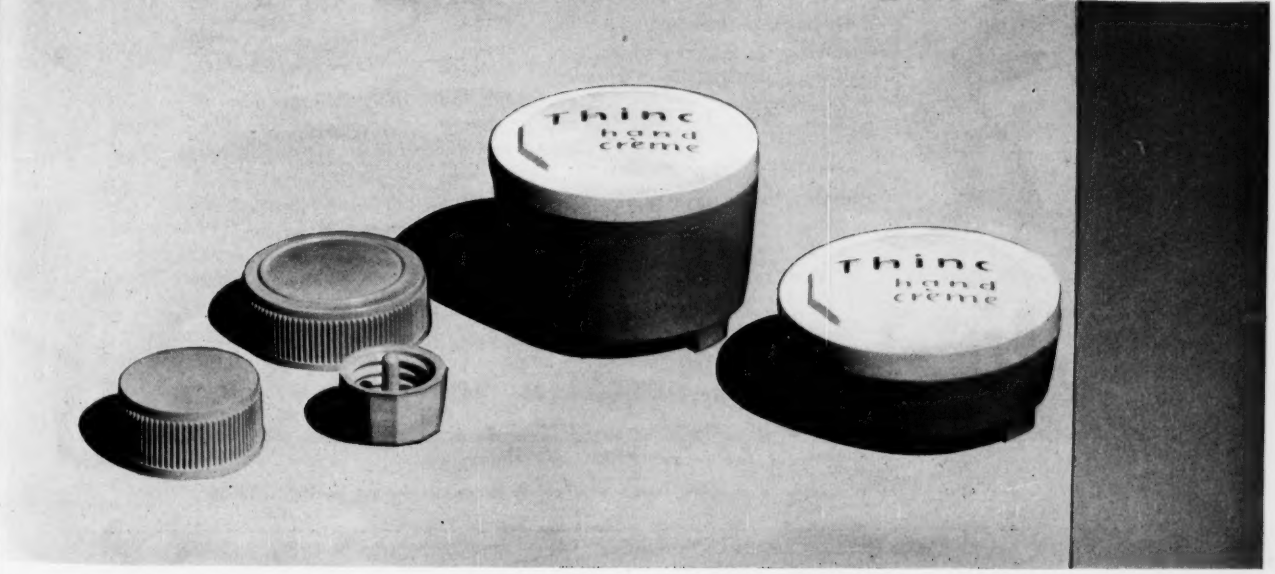
COLUMBIA PHONOGRAPH CO., INC.

Columbia

MOLDED PRODUCTS DIVISION

BRIDGEPORT — CONNECTICUT

FOR INDIVIDUALITY IN DESIGN



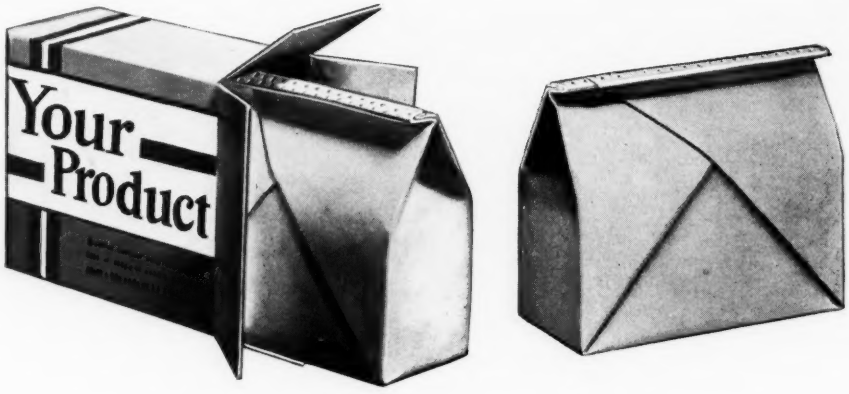
Now, maybe it's the Package for YOUR Product

FORMERLY, with its liner made of paper, the Anderson Satchel Bag Package was most practical and profitable for Jello, Junket, Royal and similar food-powder products sold "a batch to a package," because it is sift-proof, guards its contents in their original form and condition, is sanitary, economical to make, fill and close, and it pleases the user by its appearance and ease of handling.

BUT NOW, while all the above advantages remain, Satchel Bags or Liners made of FOIL (or other materials) vastly extend its range of usefulness; the CLOSING has been greatly improved; and the SPEED of packaging practically doubled.

Tin Foil, Aluminum Foil

and other Liners adapt the package to Tea, Coffee, Cereals, Spices, Milk Powders, Medicine Powders and other products whose keeping quality depends partly upon the tightness of the closing.



Photographic Enlargement of Perfected Closure

The Improved Closure

is shown in the enlarged view of that portion of the package, in which you will observe that the edge is now FOLDED before being CRIMP - LOCKED and that this extra fold completes the protection against the passage of air.

As to Speed

The new Anderson Packager will make the package, fill and close it, load it into carton and tuck or seal the carton at rates up to sixty or more per minute.

If There is Any Question

as to the most profitable manner of packing any powdered or granulated product of yours (be it medicine, food or non-food), tell us about it. We'll help you all we can in the solution of your problem.

PACKAGING MACHINE DIVISION of

The Fred Goat Co., Inc.

314 Dean Street, Brooklyn, New York

SPECIAL MACHINERY SPECIALISTS

Established 1893

For the design, development and production of special devices or machines please address our Contract Division

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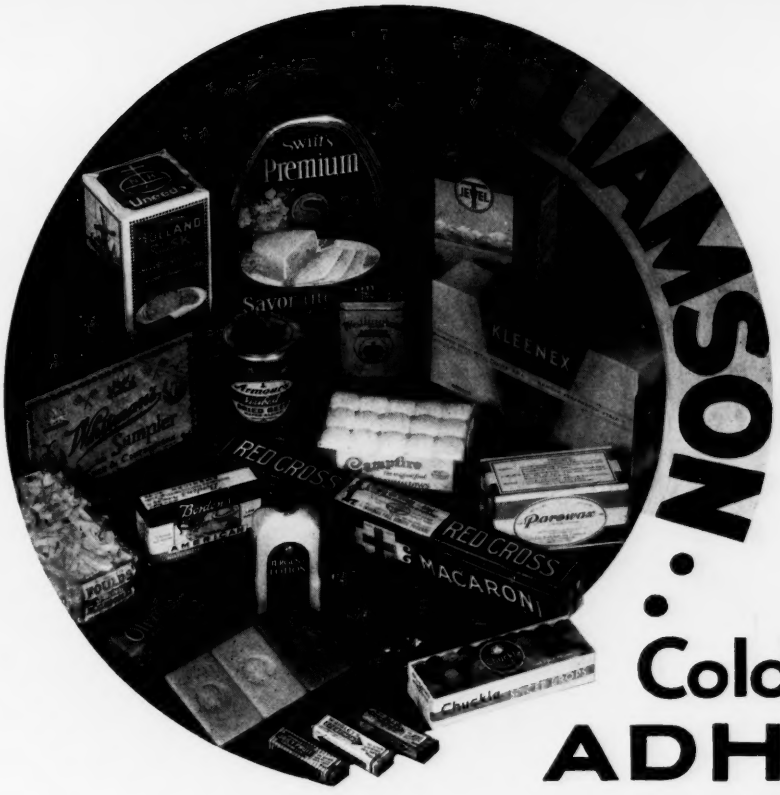


WILLIAMSON • Cold Odorless ADHESIVES

Nationally known packages sealed or labeled with Williamson adhesives

ALWAYS keeping pace with the packaging industry, we aim to develop and supply a complete line of glues, gums and pastes to meet the requirements of the many new types of wrapping materials and various makes of automatic sealing machines that are constantly coming into use.

Our products include glues for wax paper, waterproof gums for spot labels on tin, adhesives for glassine papers, gums and pastes for can labeling and bottle labeling, glues for tube winding, tight wrapping, loose wrapping, carton sealing and shipping case sealing. We have eleven different stock adhesives for transparent cellulose wraps and acetate sheets—Cellophane, Sylphrap, Kodapak, Protectoid—for joining these various sheets, plain and moistureproof, to themselves or to paper, boxboard or waxed board as in making window box cartons.

As an aid to our customers in solving special problems, we maintain an "experience file" of recorded data on many kinds of adhesive operations, performed under actual working conditions or tested by laboratory methods. This live file of facts contains over sixty classifications such as Chemical Attack, Waterproof Adhesives, Metal Surfaces, Foil, and Varnished Surfaces with pertinent information on speed, viscosity, pressure, set and tack. All subjects are cross-indexed and tied up with our glue numbers which have proven practical in commercial service. This file is supplemented by a "cabinet collection" of hundreds of samples of articles and packages, made or sealed with our adhesives.

If you have an adhesive problem, we invite your inquiries and offer you our cooperation in working out improved methods of production. For further information on Industrial Adhesives, write for folder.

Just mail us specimens of materials to be glued together—we will send you a sample of proper adhesive for trial.

WILLIAMSON GLUE AND GUM WORKS

Incorporated 1914

2350 West Eighteenth Street, Chicago

Telephone: Canal 4201

We do not believe there is any substitute for quality

Boxes that Win Admiration and Stimulate Sales!

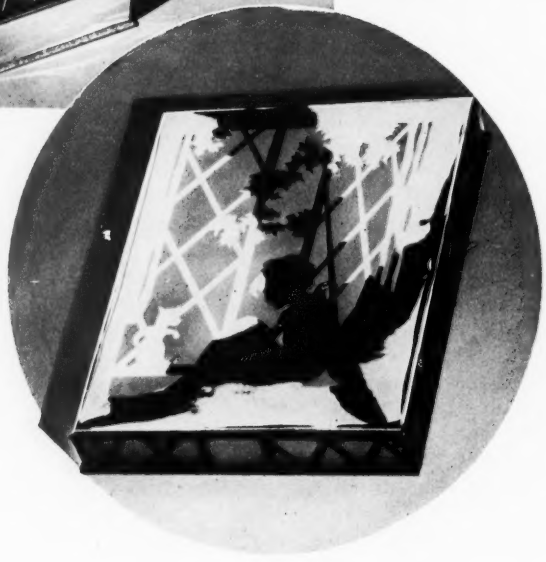
MAKING sales at the point of purchase (the retailers' stores) is largely a matter of attracting consumers to the product. The more attractive the packaging, the greater the sales.

Boxes covered with lustrous, gleaming Apollo Metal are without equal as attention getters. Their beauty and novelty quickly creates the desire to purchase.

Modern decorations and designs can be reproduced on the metal by means of stamping, etching, color printing, etc.

Newly developed automatic machines enable us to manufacture these boxes in any quantity, speedily, and at a reasonable price.

Write for samples and full information.



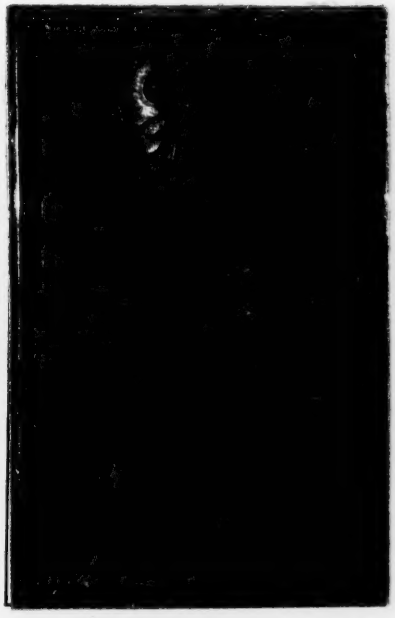
We also design and manufacture plain and fancy set-up boxes in all sizes, shapes and designs.

Our designers will gladly cooperate with you in creating a new box for your product.

THE MILWAUKEE PAPER BOX CO.

"Brain Built Boxes"

MILWAUKEE WISCONSIN



PRESTIGE

There is no easier or less expensive way of gaining greater package prestige than by using *WYNEKOOP METALABELS*. Visualize YOUR products modernized with labels of this type.

Let us quote on your next label order.

Samples and sketches upon request.

WALKER WYNEKOOP CO.

Manufacturers of Metallic Labels Exclusively

300 W. AUSTIN AVE. CHICAGO

THE NEW STYLE "R" ONE-PIECE BOX

(MINIATURE SAMPLE)

Cuts Packaging Costs In Four Ways

Being shipped in "knock-down" style, it greatly reduces transportation charges, and also requires considerably less storage space. Its construction is such that the inserting of product, closing and sealing of box can be done with remarkable speed.

No machine is required for setting-up the box. Its unusual strength and sturdiness (due to the six glued corners), combined with its attractive appearance, make it the ideal box for innumerable products.

The Style "R" One-Piece Box is made in a wide range of sizes, printed in any number of colors.

Modern precision machinery, especially designed for quantity production of these boxes, enable us to manufacture them at unusually low cost.

RUSSELL BOX COMPANY

8 Murray Street (Room 510) **New York, N. Y.**

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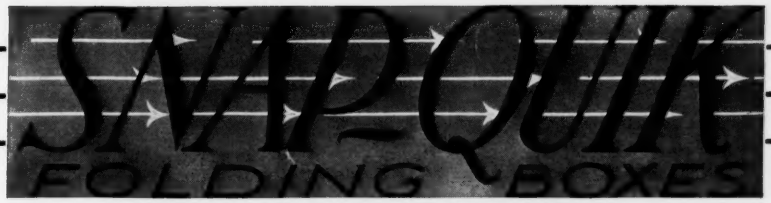


(TRADE MARK APPLIED FOR)

An Attractive and Economical Method of Packaging Scores of Products

The Snap-Quik Folding Boxes come in two pieces—top (or cover) and bottom. A miniature sample of the top only is shown below. Lift the miniature sample slightly from the page, then tear off the perforated tabs. See how quickly you can make up the cover. The bottom being of the same construction will make up just as readily. Note the square straight corners. The finished box will be perfectly square and strong.

The boxes come to you folded, no machine being required to set them up. A slight pressure on the sides automatically locks the box into position.

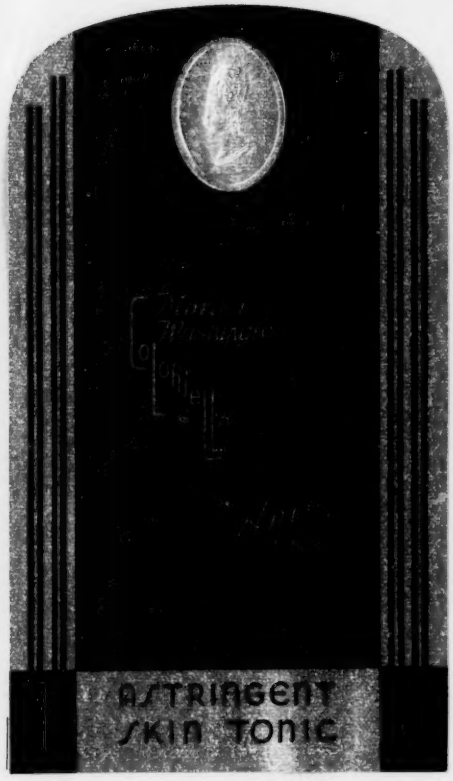
Snap-Quik Boxes have all the advantages of set-up boxes, and at the same time save 75% in storage space, made in a wide range of sizes, shapes, or in any weight of stock. Write for a sample Snap-Quik Box of a Standard size suited to your product.

TRADE-MARK APPLIED FOR

RUSSELL BOX COMPANY

8 Murray Street (Room 510) **New York, N. Y.**

A Triumph in Label Manufacturing



TO bring out all the beauty and richness of the design on a gold or silver label, black of great depth and density is required. We have developed a special black for this purpose which has proved a tremendous success. Note the smoothness and uniformity of the black on attached specimen—also its exceptionally high gloss. We specialize in the designing and manufacture of plain and embossed labels, seals, box tops and box wraps and we are always pleased to cooperate with concerns seeking novel, up-to-date designs.

RICHARD M. KRAUSE INC.
52 EAST 19TH ST., NEW YORK

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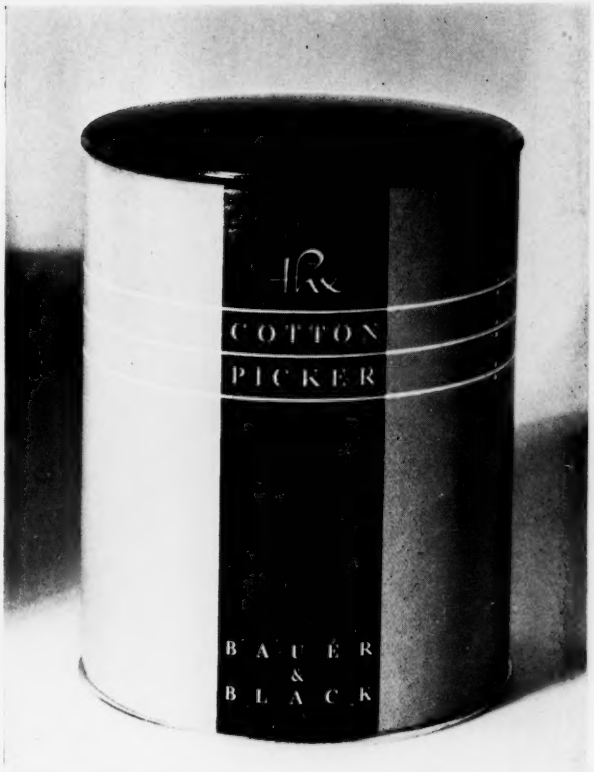


RITCHIE Fibre Cans are being used in increasing quantities because of their many practical features. They are made in a variety of sizes and shapes—square, round, oval—and with scores of different closures. The cover of the cotton picker shown in adjoining photograph—is a black lacquered metal which fits snugly into the top of the container. It contributes a smart touch to this popular package.

W. C. RITCHIE & COMPANY

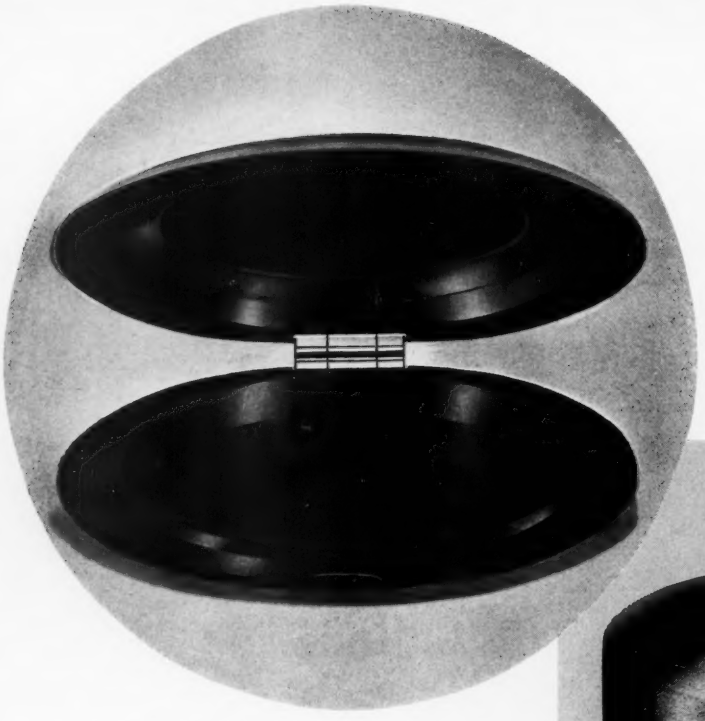
NEW YORK — Established 1866 — CHICAGO

L. H. BRODRICK, New York Representative

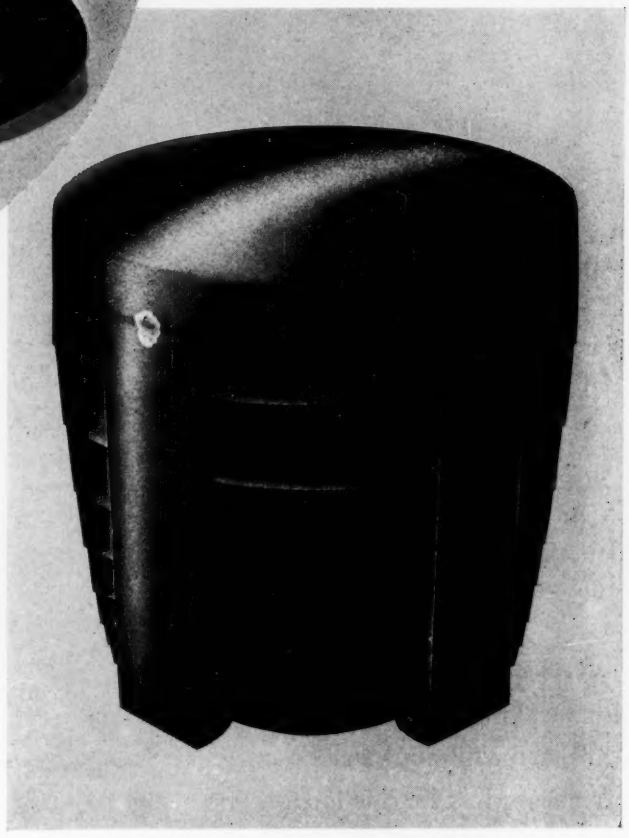
FOR over half a century the Ritchie Company has been designing and producing fine paper boxes for manufacturers throughout the country. Its leadership in this field is largely the result of outstanding designs and workmanship of the highest order, which characterize every box created and produced by our organization.

The services of our Package Styling Department are at your disposal in creating a new and more attractive package for your product.

Simplicity
Distinction
Practicability
Beauty » » » »



Compact with special hinge construction; obtainable in all colors



A newly designed cream jar available in all sizes

Bring your product up to date with a modern molded container—one that will add new distinction, beauty, practicability, and increased sales appeal to your product.

Years of experience in the designing and molding of containers, closures, display stands and other devices, enable us to produce molded articles of unusual effectiveness. We mold in all the well-known plastics.

A representative will gladly call to show some outstanding containers molded by us, and also submit ideas for the packaging of your product —without any obligation on your part.

PLASTIC MOLDING CORP.

Sandy Hook, Conn.

New York Office—505 Fifth Avenue—MUrray Hill 2-4649

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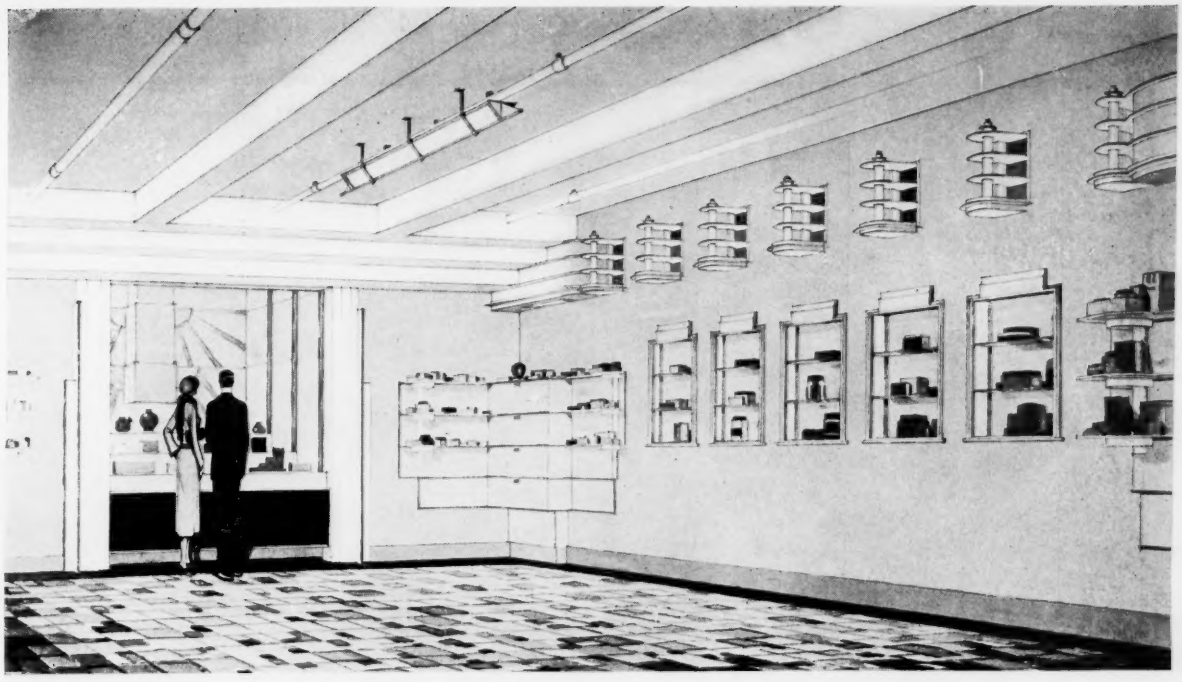
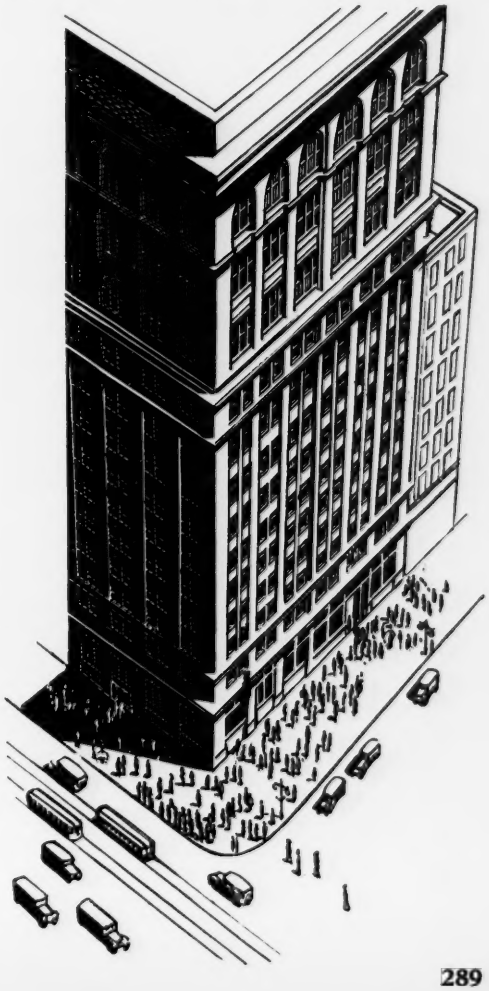


LIKE A VISIT TO MANY MARKETS

To see, compare and examine the hundreds of different types and styles of packages and containers, wrapping materials, closures, caps, linings, bags, bottles, jars, boxes—which are on display in our Packaging Exhibition—is like a visit to many markets.

Here the packaging executive can see the newest designs and color schemes, samples of the actual materials used, a reference file of catalogs of manufacturers serving the packaging industry, photographs of packaging machinery and equipment of every kind, as well as one of the most complete and up-to-date Buyers' Guides to the packaging industry.

These are some of the many means we place at your disposal, to help you with your packaging problems.



MODERN PACKAGING

Published by

BRESKIN & CHARLTON PUB. CORP.

425 Fourth Avenue **New York, N. Y.**

HERE'S THE BEST WAY TO KEEP UP-TO-DATE ON P

Every Month

New packages described and illustrated.

Descriptions and actual samples of packaging materials.

Articles on successful package merchandising.

New Machinery and supplies section.

New developments in package legislation and protection.

Articles on packaging plant production.

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N PACKAGE DEVELOPMENTS

START THIS MONTH

- AS AN ideal companion to your copy of the Packaging Catalog . . . as a monthly source of up-to-date packaging information . . . MODERN PACKAGING will fulfill your most exacting needs.

- If you are interested in package design, the descriptions and illustrations of new packaging successes may give you just the "big idea" you are looking for.

- On the other hand, if you are trying to decide how a new "dress" for your products might affect your sales volume, some merchandising article may give you a "cue" that will start you on the right track.

- If you are interested in the economical production of packages, your interest will center upon the section of MODERN PACKAGING devoted to production operations.

- MODERN PACKAGING is a most attractively printed, lavishly illustrated magazine—a work of art from cover to cover. In each monthly issue you will find many actual samples of new packaging materials, and a wealth of helpful information you can ill afford to miss.

- The price of MODERN PACKAGING is only $3.00 a year. There is an order form below. Say when!

BRESKIN & CHARLTON PUB. CORP.
425 Fourth Ave., New York, N. Y. Date.....

Gentlemen: If Modern Packaging is as good as your Packaging Catalog, I want it! You may enter my subscription for one year (at $3.00) to begin with this month's issue.

☐ Here's the $3.00 now. ☐ I'll pay your bill

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